

# THE CULTIVATOR:

A MONTHLY PUBLICATION, DEVOTED TO AGRICULTURE.

Vol. IV.

ALBANY, JANUARY, 1838.

No. 11.

J. BUEL, Conductor.

Office No. 3 Washington-street, opposite Congress Hall.

TERMS.—FIFTY CENTS PER ANNUM, TO BE PAID IN ADVANCE.

Special Agents.—L. & R. HILL, Esqs. Richmond, Va.; Messrs. BELL & ENTWISLE, Alexandria, D. C.; GIDEON B. SMITH, Baltimore, Md.; JUDAH DOBSON, Philadelphia, Pa.; Messrs. HOVEY, Boston, Mass; ISRAEL POST & Co. Booksellers, 88 Bowery; ALEXANDER SMITH, Seedsman, Broadway, N. Y. ALEX. WALSH, Lansingburgh, gratuitous agent. Any gentleman who will enclose us \$5, free of postage, will be considered also a special agent, and will be entitled to every eleventh copy, or its equivalent, as commission.

The Cultivator, according to the decision of the Post-master General, is subject only to newspaper postage, viz: one cent on each number within the state, and within one hundred miles from Albany, out of the state—and one and a half cents on each number, to any other part of the Union.

## THE CULTIVATOR.

### TO IMPROVE THE SOIL AND THE MIND.

To agents and others.—A great number of accounts are now due to us, which, though individually small, form an aggregate which would enable us to pay our printer—money which we owe him, and which he wants. We wish to settle all accounts of the current, before we commence our next volume—where it is practicable. Our mail accounts exceed six hundred in number.

A list of Agents for the fifth volume, will be inserted on the cover, which will accompany the next, or February number.

### THE NEW YEAR.

On the departure of the old, and the advent of the new year, custom imposes upon us the pleasing duty of tendering to our patrons the congratulations of the season, and warrants us in communing with them on the past, with a view to our mutual benefit in the coming year: We therefore greet them all with "A HAPPY NEW YEAR;" and that we may contribute our mite towards the fulfilment of this wish, we invite to a retrospective view of the past year, the better to enable us to avoid its errors, atone for its omissions, and profit from its experience.

The duties of life are many and diversified. They are religious, moral, social and relative. They relate to our Creator, to society, to our families, and to ourselves. Leaving the consideration of the first to more suitable and competent hands, and to the silent and unerring admonitions of conscience, let us direct our attention to those duties which fall particularly within the purview of our journal. And,

1st. *As to our business or calling.*—Have we improved in this? Have we augmented the fertility of our soils, and increased their products,—by draining, manuring, alternating crops,—by clover and root culture, and by adopting a regular system of management? Have we improved our farm stock, by breeding from the best individuals, or by introducing better breeds—and our farm implements, by the use of those which most abridge labor, and which perform the best work? And above all, have we improved the mind, the great lever which multiplies power, in that knowledge which is the guide and solace of labor, and which imparts dignity and independence to man? If we have not done all or any of these things, we have left undone those things which we might have done, and which in general we ought to have done, to advance our prosperity and usefulness. The agricultural periodicals of the day proffer to our aid the improvements and best practices in husbandry of the agricultural world, and instruct us in the great principles of nature upon which the most enlightened and successful farming is based. These publications may be likened to the seed which is sown upon a good soil—the outlay is trifling—the income twenty, fifty and an hundred fold. The march of improvement, in all the arts of productive labor, is steady and certain; and he that will not go forward upon the flood of tide, must expect to be swept back by its ebb.

2d. *As regards our relative duties.*—These involve great responsibility; and our enjoyments in life, and the welfare of those entrusted to our charge, materially depend upon the fidelity with which they are performed. In these matters the eye affords a stronger medium through which to convey instruction than the ear; and children more readily imitate what they see, than profit by what they hear. Precept may be likened to the moon, which shines with borrowed light, but which neither warms nor animates—example to the sun, which vivifies all within the sphere of its influence. We hardly need be reminded of the strong natural bias we

NO. 11—VOL. IV.

have to whatever we term our own; and that we often commend, or justify, at home, what we disapprove, or find fault with, abroad. If the importance of the relative duties of life have escaped our observation, or those duties have been neglected, there is ample room for our improvement in the coming year.

3d. *Of our social duties.*—These relate to our neighbor, and to society at large; and in the aggregate they form national character, and constitute national power. The isolated being, who extends not his charities nor his kind offices beyond the circle of his family, mistakes alike his duty and his true interest. The command is, "love your neighbor;" and it was a governing principle with Franklin, that to do good to others, is to fulfil one of the great duties of life. The reward, even in life, is sure. The consciousness of having contributed to the promotion of virtue and human happiness, is a sure reward, to all who justly apprehend the difference between virtue and vice. The social duties are performed in a variety of ways. Individual example, in habits of industry, frugality and temperance—in acts of kindness, benevolence and liberality—in the practise of honesty and integrity in our dealings—in affording friendly counsel and pecuniary aid to the unfortunate—in the diffusion of useful knowledge—and, generally, in efforts to lessen the evils, and to multiply the substantial enjoyments of society;—individual example, we say, has, in these matters, an imposing and salutary influence, in a greater or less degree, according to our standing and influence in the social circle. There is no man, however humble be his condition in life, whose example does not exert an influence, for good or for evil, upon some of the circle of his acquaintance. Let us all then endeavor to throw ourselves into the scale for good, that good may more abound among us; and if we have neglected any of this class of duties, to make amends before another new year.

We have gone through the retrospect we designed to take. If the considerations we have suggested for improvement, should influence any one—and we hope they may many—to become a better farmer, a more watchful and exemplary parent, or a more useful citizen, during the coming than he was during the past year, then shall we consider the time employed in penning these remarks as having been profitably spent.

### AGRICULTURAL REPORT FOR 1837.

The season of vegetation, during the last year, may be denominated a cold, and comparatively wet one. But a few hot days were experienced, and the quicksilver, at no time, rose above 92° of Fahrenheit. The mean temperature, it is believed, was some degrees lower than in ordinary seasons. In some districts, frosts early in August partially injured tender crops. Other districts were not visited by frost till the middle of September, and others again not till the night of the 3d of October. Low flat districts and localities were visited most early by frost, while those more elevated, where the winds had full sweep, were last to feel its blighting effects. This was owing to the humidity and comparative stagnation of the air in the vallies. In consequence of the low temperature of the summer, vegetation was from ten to fourteen days later than usual; many fruits and vegetables, natural to warmer climates, but which have hitherto been generally brought to maturity in our gardens, and some that are indigenous in our latitude, as the hickory nut, black walnut and honey locust, did not attain maturity before the intervention of frost. The Isabella and Catawba grapes, the melon, tomato, egg plant, okra, and other tender productions of the garden, but partially ripened, except where their growth had been facilitated by glass or other artificial protection.

We will remark here, that an opinion is entertained by many, seemingly based upon the Huttonian theory of the earth, that our climate is mutable; that there is a gradual but continual lowering of the temperature of the globe; and that it consequently becomes necessary to make a gradual transition of plants from higher to more temperate latitudes. Dr. Muse, in an address to the Dorchester Agriculture Society, Maryland, imputes to this cause, though we think erroneously, the failure of the winter wheat crop in that state, in late years. The failure of the wheat crop, in that and other districts of our country, though in part owing to the mutations of climate, we think is principally to be ascribed to defective husbandry—to the exhaustion, in the soil, of the specific food of this grain. There are various geological and historical facts, adduced in favor and against the Huttonian theory; but this is not the place, nor is it our intention, to recapitulate them, or to express an opinion in the matter. We merely allude to the subject incidentally, and pass to the prominent product of our soil—

*Wheat.*—On the breaking up of winter, this crop looked bad, in most parts of our country. The Hessian fly had been at work, particularly in the middle states; the winter had been unpropitious, and the spring opened unfavorably. The fine weather in May, however, seemed to renovate the crop, and the prospect became cheering till the eve of the harvest.

But then came the blight, which, together with the grain worm, very much lessened the product in this state. From the high price of bread stuffs last year, however, larger quantities were sown than usual; and the product, in the west, has been an increase upon the last crop. In the valley of the Mohawk, and upper valley of the Hudson, the crop has been diminished by the grain worm. In the middle states the crop was less than, and in the western states over, a medium one. In Maine, in consequence, it is said, of the premiums offered by the legislature to the cultivators of this crop, the product has been greatly increased, though the grain worm has done considerable damage there.

The spring varieties of wheat seem to be coming into repute; and those of recent introduction, as the Italian, Siberian, Black sea and tea, appear well adapted to our various soils, and promise amply to reward the labor of those who cultivate them. The demand for the first named has been uncommonly great, and if it continues, as the result of the trials with it seem to lead us to expect, it will soon constitute our principal crop. Many hundred bushels of the Italian variety were sent down the Hudson, last fall, as seed, destined to the middle, southern, and eastern states.

Rye has been a fair crop, we believe in every section of our country. The late sown is perhaps an exception to the remark. So far as our observation went, this last was light in product, which we, on conjectural grounds, ascribed in great part to the depredations of the grain worm.

Indian Corn, has been better than it was in 1836, in the valleys of the Hudson and Mohawk; in the northern and western parts of this state it has been light; in the southern, middle and western states, perhaps above a medium yield. Taking the country at large, there has been an increase of crop from last year. The early varieties are more sought after, better attention is being paid to preparing for and cultivating the crop, and harvesting by cutting the stalks at the ground, at the usual time of topping, is found to possess advantages over the other modes of saving the crop. The southern practice of stripping the blades from the stock, while the grain is in milk, is certainly a bad one.

Oats have probably never been better in the north; the crop has been abundant, and grain heavy. The constant and increasing demand for this grain, and the high price which it bears, in consequence of the great number of horses employed on the canals and elsewhere, are likely to increase and improve its culture. Now that a standard weight is fixed by law, it becomes the interest of the farmer, if it was not before, to cultivate the heavier varieties, and to bestow upon them better culture than formerly. There is no grain more free from disease and insect enemies than oats. The practice of making oat meal, for family use, and for market, has obtained to a considerable extent, particularly in Delaware and Saratoga counties.

Barley has been more than a medium crop, and its culture is on the increase in northern New-York. Barley flour has been considerably used, both for bread, and as a substitute for buckwheat in griddle cakes. It is wholesome and nutritious, and for cakes is preferred by many to buckwheat.

Buckwheat was sown in unusual quantities, and where it was not injured by frost, it has afforded a great yield.

Potatoes, although they promised a great crop, from the growth of vines, gave nevertheless but an ordinary yield. The quality is good; though we cannot refrain from again pressing our recommendation to farmers to cultivate only the best and most farinaceous kinds. Such are the most grateful and healthy in the family, bring the best price in market, and are withal the most nutritious for farm stock.

Root crops, that is, the culture of the ruta бага, mangold wurzel and carrot, have been greatly increased the past year; and we hesitate not to say, the progress in this branch of our husbandry will be steady and rapid. The season has been propitious, and the product abundant. Some of our neighbors, novices in the culture, have been surprised and gratified with a yield of a thousand bushels the acre. We repeat that these roots, we speak from personal experience of the ruta бага, are an excellent winter food, either in whole or in part, for neat cattle, horses, sheep and pigs, and they may be made greatly to lessen the expenditure of grain, in the economy of the farm. For the table the Swede is decidedly superior to the common turnip, after the setting in of winter. The latter then deteriorates—the former improves with keeping.

Peas have given a tolerable fair yield. Our own practice does not enable us to speak of the relative profits of this crop; but we understand it makes a very good return, particularly in elevated districts exempt from the pea bug.

Hay has varied in its products—in some districts not giving so good a return, and in others a better, than in 1836. On the whole, the crop may be put down as less than a fair average one. We again recommend the breaking up of old meadows, where the product has become small, and of subjecting them a few seasons to the plough. Those who cannot, or will not, do this, may improve their meadows by sowing grass seeds, giving them a light top dressing of dung or ashes, and of then scarifying with Concklin's Press Harrow, or a like implement. By the bye, Mr. Concklin has improved his press harrow, and reduced the price, from one hundred to sixty dollars.

On the whole, taking into view all the products of the soil, the yield

may be deemed full an ordinary one; for although there is a manifest deficiency in some kinds, an unusual quantity of ground was put in crop, and the harvest in other kinds has been bountiful. Our system of farming is evidently mending—improved farm implements have been multiplied, and their use greatly extended—more attention has been bestowed on select animals for breeding—better seeds are selected—root and clover culture has been extended—useful information is coming more into demand—and a new zeal is manifested both for the pursuits and improvements of husbandry.

*To prepare the haws or seeds of Thorns, that they may grow the first year.*—Separate the pulp from the seed, in winter, and keep the latter moist, either exposed to the alternations of freezing and thawing, or not, till the ground can be prepared for their reception in the spring. They will soon germinate and grow. For confirmation of the efficiency of this mode of management, see the authorities of Thomas Main, Caleb Kirk and John A. Chiswell, which will be found under the heads of "Live Fences," and "Correspondence."

*On the means of improving our Agriculture.*—We bespeak an attentive perusal for the article under this title, published under the head of "Extracts," from the pen of Sir John Sinclair. We shall, in our next, give another extract from the same authority, *On promoting the collection and diffusion of useful knowledge.* These articles are peculiarly adapted to the present season, when the legislatures of most of the states are in session. The facts and suggestions which they contain, are of deep interest to our country;—they demand the notice of the farmer, the merchant, the manufacturer, and the mechanic; and are specially addressed to our statesmen and legislators, who are charged with the great interests of the commonwealth. No man, perhaps, has done more to advance the agricultural improvement, and consequent prosperity of his country, than the writer of these articles. He was instrumental in establishing the British Board of Agriculture, was one of its most useful members, and was particularly serviceable in collating, arranging and publishing the multifarious information and facts which it collected, in his "Code of Agriculture," one of the most useful works upon husbandry extant. He was the correspondent of Washington.

*To avoid the Bee-moth.*—Keep your hives of bees on the ground during the summer months. See the article on this subject, signed C. D. under "Extracts."

*Root Culture.*—R. Harrison, Jr. writes us from Wheatland, Monroe,—"My root crop has come in well this season." I have about 2,000 bushels of ruta бага, sugar beet and mangold wurzel. Some of the ruta бага weigh 17 lbs.—sugar beets 15 lbs. I am so well pleased with my root crop, that I intend to enlarge it next year." These roots are probably the product of about three acres of land. Feeding at the rate of two bushels a day—120 lbs—to a bullock, they will suffice to feed ten cattle one hundred days, comprising the main part of the winter months—and to fatten them. The same ground in hay, estimating the product at a ton and a half per acre, and the daily ration of each beast at 28 lbs. would barely keep ten cattle, without fattening them, a period of thirty-two days, or one-third the time that the roots would feed and fatten them.—The manure, with the root feed, would be worth thrice what it would be if the cattle were fed upon hay alone. Can it be wondered, that the English farmer so highly extols the root culture?

#### PEAT EARTH, AND PEAT ASHES,

##### IMPORTANT SOURCES OF FERTILITY TO THE FARM.

We assume it as a well established truth, that every vegetable substance is capable of becoming food for farm crops, whenever it is rendered soluble, that is, when it becomes dissolved and blended with the liquids of the soil. Putrefaction, in a great measure, renders vegetable matters soluble, and consequently fits them for the food of plants. Combustion produces in a measure like effects, though in most cases with a considerable loss in fertilizing matters. Peat earth, or swamp muck, though differing essentially in quality, is considered as an inert mass of half-corrupted vegetable matter, requiring to be brought in contact with fermenting matters, or with fire, to render them soluble. Fire, to be sure, would seem to destroy the vegetable matter, and consequently the power of peat earth to impart fertility; but it will be seen from the analysis of peat ashes in our last, that in them it rather concentrates the elements of fertility—in the form of salts, which are readily dissolved by the humidity of the earth, and become highly enriching to the soil. Combustion renders the mass lighter, and of course more portable. Peat earth differs greatly from green vegetables, and from yard dung—not so much in its elementary matters, as in its tendency to putrefaction. The first putrify spontaneously, in a summer temperature, under the influence of air and moisture; the latter do not putrify spontaneously under the like agents. And hence the importance of directing the farmers attention to this subject.

When applied directly to soils, peat earth and moory soil are so extremely slow in decomposing, that they do not impart but little fertility,



although the dressing be abundant; yet they nevertheless mechanically improve stiff soils, by rendering them more porous. But spread in the cattle yard for a season, they become intimately blended with stimulating substances, and fitted to develop all their fertilizing powers. Lord Meadowbank gave to the subject a scientific investigation, and after various experiments, left directions for the preparation of peat earth in composts, with dung, &c. of which we extract the following summary from British Husbandry.

## COMPOSTS OF PEAT EARTH.

"The peat of which the compost is to be partly formed, should be thrown out of the pit some weeks, or even months, previously, in order to deprive it of its redundant moisture. By this means it is made lighter and less compact when made up with fresh dung for fermentation; and accordingly less dung is required for the purpose than if the preparation be made with peat recently dug from the pit. It should be taken to a dry spot, convenient to the field which is to be manured, and placed in a row in the place intended for the midden. When ready to be made up into compost, half the quantity of dung must be carted out, and laid in a parallel row at such a distance as will allow the workman to throw the rows together by the spade; the compost may thus be laid in the centre, and will form the area of the future heap.

"Let the workman make a layer or bottom of peat about six inches deep, and extending further than the base of the proposed midden, (which is but another term for dunghill) which is to be thrown up in alternate layers: first, ten inches of dung over the peat, then peat six inches, dung four inches—thus diminishing each layer of dung until the heap rises to a height not exceeding between three and four feet, when the whole should be covered—top, ends and sides—with the remains of the peat; the whole to be put loosely together, and made quite smooth.

In mild weather, seven cart loads of common farm yard dung, tolerably fresh made, is sufficient for 21 cart loads of peat moss; but in cold weather, a larger proportion of dung is desirable. The dung to be used should either have been recently made, or kept fresh by the compression of cattle or carts passing over it; and as some sorts of dung, even when fresh, are much more advanced into decomposition than others, it is necessary to attend to this, for a much less proportion of dung that is less advanced will serve the purpose.

After the compost is made up, it gets into a general heat, sooner or later, according to the weather and the condition of the dung: in summer, in ten days, or sooner; in winter, not perhaps for so many weeks, if the cold is severe. It always, however, has been found to come on at last; and in summer it sometimes rises so high as to be mischievous by becoming fire fanged. Sticks should therefore be kept thrust into different parts, as by drawing them out occasionally the progress of the fermentation may be ascertained; and if so rapid as to approach to blood heat, it should be either watered or turned over, and a little moss be added. The heat subsides after a time, and with variety proportioned to the season and the perfection of the compost; but, when cool, it may be allowed to remain untouched till within about three weeks of being wanted: it should be then turned over, up-side down, and outside in, and all the lumps broken; after which, it comes into a second heat, but soon cools, and may be taken out for use. In this state the whole appears a black mass, like garden mould, and, it is said, may be used, weight for weight, like farm yard manure, with which it will fully stand a comparison throughout a course of cropping.\* Sixteen single horse cart loads per acre are, indeed, said to have produced comparatively as good a crop as twelve of farm yard dung.†

## EXPERIMENTS.

"The following experiments upon composts of peat combined with various substances, communicated to Sir John Sinclair by Mr. Arbuthnot, of Peterhead, will tend to show the power of fermentation in occasioning its decomposition, and its consequent probable effect upon the land:—

1. Peat moss was mixed, in the month of November, with rotten seaweed, in the proportion of 300 cart loads of the former, to 50 of the latter. In January, the midden, having attained the heat of 90° Fahrenheit, was turned; in March, the operation was repeated; and in the latter end of April, the compost was spread upon 18 acres of land, and immediately ploughed in. On the 15th of May, the field was sown with barley, which produced one-third more than any similar crop from the same land when manured with dung.

2. Another field was manured in the same proportion of composition,

\* Essay by Lord Meadowbank, pp. 148 to 151. To every 28 loads of compost, when made up, it is also recommended to add one cart load of ashes, or, if these cannot be had, half the quantity of finely powdered slaked lime may be used; but these additions are not essential to the general success of the compost, though they will tend to quicken the process.

† Gen. Rep. of Scotland, vol. ii. n. p. 550. In Holland's Survey of Cheshire, it is also mentioned, that three tons of compost, made from moss and dung, have been spread on part of a meadow, and three tons of rotted dung upon an equal portion of the same field, it was found that, although the grass on that part which was covered with dung only, came up as soon, and upon the whole grew rather higher than that on the other part, yet the latter was of a darker green, and yielded nearly an eighth more when it came to be cut.

with equal parts of cow-dung and sea-ware; the ground was planted with potatoes, and the produce was large and of excellent quality. Turnips, mangold wurtzel, and cabbages, were tried with the same manure, and the crops were all luxuriant.

3. The foundation of a midden was laid on the 1st of May, with 800 cart loads of peat moss, and 150 of cow dung. The cattle had been littered with green rushes; which, although they had lain in the dung pits for more than nine months, showed no signs of decomposition. About the middle of June, 50 hhds. of salt water were, therefore, thrown upon it, and the fermentation then began very quickly. The heap was first turned in the middle of July, and some newly slaked lime added to it. By the latter end of August, it was all grown over with chickweed, when it was again turned, and showed the appearance of a total decomposition of all the mass, into mould of a uniform, smooth, soapy like consistence, of a strong smell.

4. Consisted of 300 cart loads of peat moss and 50 of town dung. The decomposition was completed as soon as in the former experiment; but the appearance was not equal throughout.

5. Was composed of 200 cart loads of rough peat sods, with a leafy sward, mixed together in July with 30 loads of horse dung, and the fermentation came on more rapidly, than in either of the foregoing experiments; probably, however, owing partly to the heat of the weather, as well as to the nature of the dung.

6. In this experiment, 300 cart loads of peat moss were put in three layers of equal quantity. The foundation was laid one foot deep with moss, and then 150 gallons of the urine of cattle was thrown upon it. The fermentation came on almost instantaneously, attended with a hissing noise. The other two layers were then put on, when the same effect was produced; eight days afterwards, it was turned, and to all appearance was completely fermented."

Having thus furnished to our readers the information we deem most important, to enable them to employ peat earth as a means of enriching their uplands, we shall proceed, in our next, to speak further of the manner of bringing peaty soils into a productive and profitable state.

## INFLUENCE OF EDUCATION UPON AGRICULTURAL IMPROVEMENTS

Among the prominent causes of the superiority of British husbandry, enumerated in Brewster's Encyclopædia, is the suitable education which the principal farmers receive in modern times. The rule will hold good every where, that improvement in agriculture will be in proportion to the attention bestowed upon the education of the agriculturist. "A man of uncultivated mind may hold a plough, or drive a harrow" our author remarks, "in a sufficient manner; but he will seldom introduce an improvement, or be the means of effecting any change in the system of rural economy. In former times it was objected, that farmers were an obstinate and bigoted class of men—[as is too much now the case with us] averse to every kind of innovation upon established practice, and persisting in ancient practices, even after their deficiency and inutility had been ascertained in the most decisive manner. Whatever truth there might formerly be in the objection, its force is now completely removed; there being no set of men whatever more open to conviction, or more willing to adopt new practices, than British farmers of the present day. This change of disposition has been accomplished by a general circulation of agricultural knowledge, since the establishment of the national board of agriculture; by numerous periodical publications upon rural economy; and by that increase of wealth which flowed from the exertions of the farmer, and which naturally stimulated a search after new improvements."

*Extent and effect of agricultural improvements in Scotland.*—Since the conclusion of the American war, in 1782, improvement has proceeded with singular rapidity in every district; and while the rental rolls of proprietors have been doubled, tripled and quadrupled, the condition of the tenantry, and of the lower ranks, has been ameliorated almost in a proportional degree. These circumstances are sure tokens of agricultural prosperity, and demonstrate in the most favorable terms, that husbandry is a main pillar of the state; and that the happiness and welfare of the community depend greatly upon the manner in which the art is executed. No nation, whose husbandry is feeble and imperfect, can be regarded as really prosperous, however considerable may have been the advances they have made in other arts, because, when the art of raising food is neglected, all others must ultimately be forsaken. In short, to promote and encourage husbandry, to remove every obstacle that stands in the way of exercising it, and to secure those concerned in carrying on the art, are duties obligatory upon the government of every country; and according as these duties are discharged, so will the wisdom of such a government be estimated, by every man, who feels for the prosperity of the state, or is attentive to the sources from which that prosperity proceeds.—Brewster.

*Agricultural Surveys.*—The numerous agricultural surveys, executed under the authority of the [British] Board [of Agriculture,] were of singular advantage, because they brought to light the practices of every county; and, while they pointed out the obstacles which lay in the way of improvement, they stated the most effectual methods of removing

them. The very collision of argument, which such discussions occasioned, incited agriculturists to investigate the principles of the art which they professed, and induced them to search after new channels of improvement.—*Brewster.*

#### HEDGES—OR LIVE FENCES.

We resume this subject, from our October number; but before we proceed to the second branch of the subject, viz. the manner of procuring the plants, we will speak of some other plants which are or may be used for hedges.

The *ELM*, although ranking among the first class of forest trees, seems to us adapted to this purpose, particularly the species commonly known by the name of slippery elm, (*Ulmus fulva* of Mich.) which is smaller in its growth than the common American kind. Although this plant is not armed with spines, the common requisite of a hedge plant, its branches and top are so flexible that they may be readily bent to a horizontal, or recumbent position, & interwoven with each other, without materially obstructing their growth; and when once interwoven in this way, and the fence having attained a proper height, they present a barrier to the strongest animals. Some plants accidentally mixed with our honey locusts, have given us a high opinion of their fitness for hedges.

Another plant which is used considerably in Europe, in wet grounds, and which may be found useful in like grounds here, is the *ALDER*, (*alnus*;) but this is calculated to succeed best here, as it does there, planted on a bank and ditch. On grounds natural to its growth, the *WHITE BIRCH*, (*Betula alba*;) cannot fail also of succeeding well. We have seen tolerable fences made of this plant, by merely lopping them in a line; and if they are planted and trained, they must make a fence.

#### 2. TO OBTAIN HEDGE PLANTS.

The most certain mode is to plant the seeds, and to raise the plants in nursery beds. Plants of the indigenous thorn, and of the red cedar, may often be obtained in large quantities from the pastures and woods. We have a good hedge of the former, the plants of which were obtained in this way. When such are used, they are cut down to within a few inches of the ground when they are planted. The prim and Cherokee rose are readily propagated by cuttings. They may be planted on the site of the intended fence, if the ground is properly prepared, and afterwards kept clean. The alder and white birch are best taken in stools, or single plants, from the grounds where they grow, and where they are to serve as fence. The Japan quince, as we before observed, may be propagated by cuttings of the root. But as regards the wild crab, the honey locust, the beech, Osage orange, elm, buckthorn, and generally the common thorn, the principal reliance is to be had upon plants raised from seeds in the nursery. Plants of the European hawthorn are annually imported in quantities. They are obtained in Great Britain at 2s. and 2s. 6d. per thousand, one year old. The seeds of the thorn, of the wild crab, of the red cedar, of the buckthorn, and of the beech, may be gathered in the autumn, and do best if immediately planted. They will not generally grow till the second spring, except the crab, and perhaps the beech. These seeds may all be preserved and planted in the spring, and in that case, they should be so kept that they do not heat. The seeds of the elm should be gathered as soon as they fall, which they do here the last of May, and be immediately sown. They grow quick, and attain six to twelve inches height the first season.

The seed beds should consist of rich earth, well dug, pulverized and raked. They should be from three to four feet broad, to permit their being easily wed. The seed may be sown either broad cast upon them, or in drills from twelve to eighteen inches apart, pretty thick, and covered with an inch or more of good mould. The seed beds should be kept free from weeds, and after a season's growth, the plants should be thinned, and either the stronger ones placed in nursery rows, three feet apart, and with intervals of one foot in the rows—or the smaller plants should be drawn, so as to leave intervals of three or four inches between those remaining, and pricked out in separate beds. If plants are left more than one season in the seed bed, where they stand thick, they grow slender and feeble, their roots are contracted, and they are not likely to do well when put in hedge. Plants are most profitably put in hedge when they have attained the size of the little finger, which is generally at the end of the second or third season's growth. When transferred from the seed beds, the tap roots should be shortened to four or six inches, in order to induce the plants to throw out side roots, or to multiply them close to the stem. The whole of the plants ought to be removed from the seed beds the second year, and their roots shortened, though they be not large enough to put into hedge. Plants are more easily taken care of in nursery than they are in hedge, and should therefore be kept in the former till they are strong enough to shoot with vigor.

We append to these remarks, Thomas Main's mode of growing the haws of our indigenous thorns, the first season after they are gathered. Mr. Main was a practical nurseryman, residing in the District of Columbia. He raised large quantities of quicks, many of which were purchased and planted in the neighborhood of Troy. The statement is entitled to full credit. We copy it from the *American Farmer* of 1821:—

"The seeds," says Mr. Main, "are to be extricated from the berries,

either by hand rubbing, or any other means. I commonly put them in a trough, and mash them with a wooden pestle, taking care to proportion the strokes thereof so as not to break the stones, and turning over the mass repeatedly during the operation, until all the berries are broken—after which the stones are to be washed from the pomace. Put a gallon or two of the mass into a washing tub, filled with water—let it be well broken and rubbed by the hand therein—pour off the water gently—the pomace and light stones will flow over along with it, and the good seed will remain at the bottom. It will be necessary to repeat this, say ten or twelve times, until scarcely any thing remains but the clean stones. They are then to be put in a deep square box, that will hold them with ease, so that the quantity of seed may not reach within some inches of the brim. The box ought to be loosely made, or a few gimlet holes bored in the bottom, to permit the water to drain from the seeds. It is then to be placed in some secure situation out of doors, in the coldest exposure that is convenient; and the seed in the box being covered with some moist oak leaves, or green moss, they are to remain so during the winter.—Ground squirrels and mice are fond of these seed; the box ought, therefore, to be secure from these animals. It is not necessary to mix any mould with the seed, neither is it material how often or seldom they are frozen during the winter.

"At the approach of spring, the seed are to be inspected every two or three days, say about the middle of March, [middle of April in lat. 42°.] and as soon as they feel slimy on being handled, it indicates that the shells of the stones are about to open. The weather being favorable, the ground is then to be digged and prepared for the reception of the seed. So soon as the small point of the rootlet of some of the seed appears protruded, it is then just the time, weather permitting, to sow them. Every gardener knows that the beds ought to be about four feet wide, and that the alleys should be from fifteen to eighteen inches. The seed ought to be rolled in plaster of Paris at the time of sowing, and scattered about an inch apart—half an inch of fine mould is sufficient for their covering. The plants will appear in a few days, if the weather is favorable. It is scarcely necessary to add, that to produce fine plants, clean and careful weeding is indispensable. It will save a whole year's trouble and time afterwards. The process may be summed up in one short sentence: Clean the stones from the berries, and keep them damp through the winter."

We now add, from the same excellent and pioneer agricultural periodical, conducted by John S. Skinner, John Taylor's, of Caroline, Va. method of forming a red cedar hedge:—

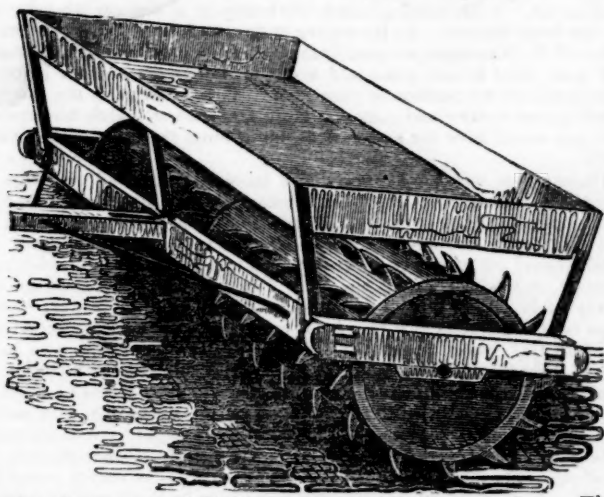
"The cedars should be transplanted in the three winter months, and in March. [We will venture to recommend here, March, April and May.] They should be taken up [in the fields,] in a square sod, of the size of a spade, and deposited in a square hole to be made by a similar spade, without breaking the sod in which the young cedar stands, so as to fit as nearly as possible. Any little crevices made by not filling the hole exactly, are to be well closed, with part of the earth coming out of this hole, and the rest of this earth is to be crumbled close around the young cedar.—The sod with the young cedar is to be taken up as deep as possible, in doing which the spade ought to be driven perpendicularly into the ground, on three sides of the young cedar, but a slant on the fourth, so as to cut the tap root, least in raising the sod this tap root should hold the cedar, and so loosen its roots. The smaller the cedars are, the better. This will aid the closeness of the hedge at bottom. The cedars are also to be two feet apart in the rows, but instead of standing opposite to each other, [for they are recommended to be planted in double rows,] across the fence, those in one row are to be placed opposite the centre of the vacancies in the other. At one year old, they should be topped with garden shears to one foot high, and the side branches clipped to within six inches of the stem. This is to be done yearly or half yearly, except at each dressing the cedars are to be left four inches higher and wider, until they acquire the height and width at which they are to be kept by yearly dressings. As some branches become too large for garden shears, the person dressing the hedge has a knife made of a piece of old scythe blade, [the bill hook is better than either.] to cut off these. An annual dressing is indispensable to the thickening of the hedge. The richer the ground the sooner the hedge will arrive at perfection."

**Kyanizing wood.**—This newly discovered process of preserving wood and fabrics composed of vegetable fibre, is likely to become very serviceable, and is already extensively employed in Great Britain. Its efficacy in preserving timber from the dry rot, had been amply demonstrated in various experiments made in the ship yards of England. Wood and vegetable fabrics, which had undergone the preparatory process, had been exposed for years, to the influence of moisture and bad air, without sustaining any apparent injury, while the like materials, not submitted to the process, suffered rapid decay and destruction. The process of kyanizing, as it is now termed, consists in immersing the wood or cloth, for a few hours or days, in a mixture of water and corrosive sublimate, in the proportion of one pound of the latter to five gallons of water. The mercury combines with the albumen of the vegetable matter, its most perishable part, and renders it insoluble, in the same manner that tan renders the gelatinous matter in hides so. Wood, or



linen and hempen fabrics, which are to be exposed to the weather, particularly in humid situations, or in the earth, may, by this process, be preserved for a great length of time.

CONCKLIN'S PRESS HARROW—Fig. 46.



We give above a cut of this implement in its improved form. The price has heretofore constituted an objection to its purchase. Mr. C. has now substituted three inch oak plank, for the cast iron, which forms the cylinder, and lengthened the teeth, and has consequently been enabled to reduce the price to \$60. We have no hesitation in expressing our belief, of the great utility of this implement to the farmer, particularly on clay farms. Its uses, on such, will be, 1. To raise a tilth upon the furrow, to supersede cross-ploughings, which besides, more or less, waste the fertilizing properties of the soil; and 2d. To scarify old meadows and pastures, which the owner does not feel willing to break up, and which will serve to loosen the soil, destroy moss, and cover the grass seeds which may be sown. It matters little whether the implement is called a *Press Harrow*, or a *Spiked Roller*; it is undoubtedly a useful machine in our husbandry, and Mr. Concklin deserves credit for bringing it into public notice.

**Geology for Schools.**—Professor MATHER, of the State Geological Corps, has just published "*Elements of Geology, for the use of schools*," 140 pages, 12 mo. From the hasty perusal we have given it, we are of opinion it will be a useful class book for the senior class of boys. The character of soils, and their natural adaptation to particular crops, are in no little measure ascertained from the character of the accompanying rocks, or of those whose integrant parts principally compose them. Transition rocks give a better soil, ordinarily, than those of the primitive class; and secondary, a better one than transition. With the additions that are contemplated in a forth-coming edition, giving to the subject a few practical application, this little work will be decidedly useful. A few copies have been left in our charge, to be given to teachers who may wish to examine the work with a view of judging of its fitness as a class book.

**The Vine.**—The best cultivators of the vine in the United States, that we know of, are Mr. Hebemont, of South-Carolina, and N. Longworth, of Cincinnati. These gentlemen have long been employed in its successful cultivation, and have produced fine wines from their vineyards, from native grapes, and are persuaded the culture may be successfully prosecuted. Mr. Longworth made nearly one hundred barrels from his vintage of 1837. A Mr. Riser, his neighbor, made twenty-five barrels from half an acre of vines, of superior quality. Mr. R.'s grapes were the Catawba, Isabella and Schuykill Muscadell.

#### THE AMERICAN INSTITUTE,

Held its tenth annual fair at New-York in October. This association was formed to promote improvement in the useful arts of our country; and well has it realized the high and patriotic wishes of its founders. The tenth annual fair afforded splendid specimens of skill and industry in most of the manufacturing and useful arts, and demonstrated our ability to supply all our domestic wants, in those fabrics, from American labor. The exhibition continued open for more than two weeks, during which it is estimated that there were more than one hundred thousand entrances into Niblo's Garden, where the fair was held. The exhibitors amounted to two hundred more than in any former year, and it is said exceeded twelve hundred in number. Thirty gold medals, one hundred and thirty silver medals, and some hundreds of diplomas, were awarded as premiums for articles exhibited. The address, by the Rev. Mr. Dewey, proceedings and a list of the articles to which premiums were awarded, are pub-

lished at length in the Journal of the Institute, a monthly periodical, conducted by T. B. Wakeman, Esq. a gentleman who has contributed largely to the usefulness and respectability of the Institute. From the list of agricultural articles, we extract the following:

Joseph Ross, Boundbrook, N. J. for the best clover threshing machine and corn sheller—*Silver medal*.

A. M. Wilson, Rhinebeck, for a mowing machine—the *Institute's certificate of first premium*, a gold medal having been awarded last year.

D. A. Webster, New-York, for a spring beater, threshing machine, equal to any one exhibited—*Silver medal*.

The same, for a spring beater hemp and flax dresser—*Silver medal*.  
Syrus Yale, Utica, for a threshing machine, equal to any exhibited—*Silver medal*.

S. S. Allen, Saratoga, for a threshing machine, (a silver medal was awarded last year.)—*Diploma*.

Jonathan S. Eastman, Baltimore, Md. for an excellent cylinder straw cutter—*Silver medal*.

C. N. Bement, Albany, for the best turnip drill cultivator, and for fine sheep—*Silver medal*.

J. C. Concklin, Peekskill, for a double roller, an important article—*Diploma*.

The same, for a revolving press harrow, a valuable improvement—*Silver medal*. [See cut in another column.]

Bulkley & Denton, Milton, N. Y. for a machine for grinding apples—*Diploma*.

David Ruggles, Newburgh, N. Y. for a fine specimen of Brussa mulberry trees and leaves, a valuable article. Introduced into this country by Charles Rhind, Esq. 572 Broom-street, New-York.—*Silver medal*.

J. W. Anderson, Flatland Neck, L. I. for an improved manure fork—*Diploma*.

Samuel Root, Hallett's Cove, L. I. for a fine specimen of squashes—*Diploma*.

J. R. Finch, Paterson, N. J. for a specimen of mulberry trees, (*Morus Multicaulus*.)—*Diploma*.

Struges M. Judd, Danberry, Ct. for a specimen of bee-hives, a valuable improvement—*Diploma*.

William Brant, Elizabethtown, N. J. for a sausage meat cutter—*Diploma*.

Patrick Cortello, Harlaem, N. Y. for a fine specimen of squashes—*Diploma*.

Hamilton Wilson, Newark, N. J. for specimens of potatoes, first and second crop this season—*Diploma*.

Robert M. Vredenburg, 2 Ann-street, New-York, for an excellent specimen of champagne cider—*Diploma*.

Gideon Hotchkiss, Broome county, N. Y. for cart ox yoke, a valuable improvement—*Silver medal*.

Cornelius Bergen, Brooklyn, L. I. for the best specimen of ploughs, (self sharpening.)—*Silver medal*.

Minor & Horton, Peekskill, N. Y. for the second best specimen of ploughs—*Diploma*.

Ellis & Borson, Boston, Mass. for a plough of superior workmanship—*Diploma*.

A. Van Bergen, Albany, N. Y. for a good cultivator. S. Dunn & Co. 193 Water-street, agents.—*Diploma*.

George A. Hoyt, Albany, N. Y. for the second best drill barrow. S. Dunn & Co. 193 Water-street, agents.—*Diploma*.

Samuel Slater, Philadelphia, Pa. for the second best corn sheller. S. Fleet, 79 Barclay-street, agent.—*Diploma*.

J. Read, 88 Broadway, N. Y. for a good washing machine—*Diploma*.

D. Talcott, Skeneateles, N. Y. for the best horse power—*Diploma*.

D. K. Minor, 30 Wall-street, N. Y. for a specimen of American pou-drette—*Diploma*.

Van Allen & Arnold, Salisbury, N. Y. for a corn sheller. S. Dunn & Co. 193 Water-street, agents.—*Diploma*.

Charles Henry Hall, Harlaem, N. Y. for a fine exhibition of short horned Durham cattle and sheep—*Gold medal*.

Leonard D. Cliff, Carmel, Putnam co. N. Y. for specimens of sheep of the Lincolnshire breed, considered very superior—*Silver medal*.

**Rohan Potato.**—Our friend J. A. Thompson, Esq. of Catskill, was the first to import this valuable variety of the potato, which he effected at considerable expense. He has raised a good crop; and with a view to obtain at least a partial remuneration, he offers seed for sale. Letters addressed to him, post paid, will be duly attended to.

**Blight in the Pear Tree.**—Considering every suggestion, which promises to be of use in preventing this evil to one of our best kinds of fruit, as worthy of notice, we state, on the authority of Saml. Myers, of Ohio, that *spreading tan around the roots of the tree*, has been found to be a preventive of blight, and that where the tree has been already affected, it has stopped the disease, and caused thrift and fruitfulness. The experiment may be easily tried.

## OPINIONS OF WISE MEN.

It is stated by Plutarch, that when Periander gave an entertainment to the wise men of the day, the question—*Which is the most perfect popular government?*—being propounded, Solon answered, that where an injury done to any private citizen is such to the whole body: that, says Bias, where the law has no superior: that, says Thales, where the inhabitants are neither too rich nor too poor: that, says Anacharsis, where virtue is honored and vice detested: says Pittacre, where dignities are always conferred upon the virtuous, and never upon the wicked: says Cleobulus, where the citizens fear blame more than punishment: says Clio, where the laws are more regarded, and have more authority, than the orators.

Aristides, the Athenian, used to say, that the true citizen, or the honest man, ought to make no other use of his credit or power, than upon all occasions to practice what was honest and just, and engage others to do the same.

*The science of agriculture*, is nothing more than an endeavor to discover and cure nature's defects; and the grand outlines of it are—"how to make heavy land lighter, and light land heavier; cold land hotter, and hot land colder." He that knows these secrets is a farmer, and he that does not know them is no farmer.—*Davis's Survey of Wiltshire.*

*Every man that wears a British coat*, pays the tithes, the poor rates, the rents, the taxes of England, with export duties and profits to foreign merchants; all of which is so much actual loss to the country.—*Chanc. Livingston.*

*Influence of luxury.*—The most judicious historians, the most learned philosophers, and proudest politicians, all lay it down, as a certain indisputable maxim, that wherever luxury prevails, it never fails to destroy the most flourishing states and kingdoms; and the experience of all ages, and all nations, does too clearly demonstrate this maxim.—*Rollin.*

## THE POLICY OF A GREAT STATESMAN.

It was by the improvement of agriculture, says Sir John Sinclair, "that the most celebrated statesmen of modern times, justly called Frederick the Great, (more from his attention to internal improvement than to foreign conquests,) raised his dominions, notwithstanding the disadvantages of situation, soil and climate, to that height of prosperity and power, to which they attained during his reign. His practice was to lay out about £300,000 sterling, (equal to \$1,300,000,) *per annum*, in the encouragement of agricultural improvements, which he considered 'as manure spread upon the ground,' to secure an abundant harvest; and in fact, instead of being impoverished by such liberal grants, he thereby increased his revenues so much, that he was enabled to leave a treasury behind him, amounting to above £12,000,000 sterling," (\$57,000,000.)

*Opinion of the celebrated Watson, Bishop of Llandaff.*—If we have quoted the following before, our apology for doing it now, is, that the sentiment is so just, and withal so important, that it will well bear repeating.

"The agricultural improvements which have hitherto taken place among us," says the Bishop, "have been by the expenditure of private wealth; but the country cannot be brought to that perfection of cultivation, of which it is capable, unless individual efforts are aided and accelerated by public wisdom and munificence. I boast not of any particular patriotism, but I would willingly pay my share of twenty or thirty millions of public money, to be appropriated by the legislature, to the agricultural improvement of Great Britain and Ireland. This appears to me to be an object of far nearer concern to our independence as a nation, than any extension of commerce, or any acquisition of distant territory, ever can be."

The territory possessed by any people, is the original property, or capital stock, from which they are supplied, not only with the necessaries, but with the comforts of life; and in direct proportion as their territory is improved, their prosperity will be advanced.

Where agriculture is neglected, population must be scanty, because the necessaries of life are wanting; and the great body of the people must be miserable, because regular employment cannot be furnished to them. Perhaps at no period has the land been more perfectly cultivated in Great Britain, than at the present; hence the lower ranks are better paid, better fed, better clothed, and in every respect more comfortably situated, than in former times. By the extension of agricultural improvement, by the meliorations made on the capital stock of the country, the numbers of the people have increased, manufactures have prospered, and both inland and foreign commerce have been carried on with vigor and success.—*Brewster.*

## HINTS ON DIET AND DOMESTIC ECONOMY.

*In boiling potatoes*—the tubers should be sized, and put into cold water, hardly enough to cover them, that they may heat and cook through equally. If put into hot water, the outside is done, breaks and wastes before the inside is cooked. It is better to boil than to steam them.

*Barley mush*—one pound of barley will give the consistence of pudding, says Cooper, to one gallon of water; but it requires to be boiled five hours to bring it to this consistence.

*Bread*—Bake your own bread; one pound of flour will furnish rather more than 1½ lbs. of bread.—*Cooper*

*Fleas and lice* on poultry are destroyed by a decoction of sassafras wood.—*T. C.*

*Meat can be preserved fresh in hot weather*—1. By covering it with fresh charcoal powder in a cool cellar. 2. By covering it with molasses. 3. By keeping it in a vessel where carbonic acid gas has excluded the common air. 4. By folding it in a cloth dipped in vin gar wherein pepper has been infused. 5. By wiping it dry, and enveloping it in melted suet.—*T. C.* Sausages, secured by the last mode, may be kept till summer.

*If your flour be not good*, add about an ounce of common carbonate of magnesia to ten pounds of your flour. This takes away the sourness, makes it rise better, and makes it more wholesome. Half an ounce of pearl ash would have the same effect, but it hurts the color of the flour.—*T. C.*

*Those whose solids are relaxed and weak*, should avoid all tough and viscid food, though it ought to be substantial; and they should take frequent exercise in the open air. Hence their food should be stewed, rather than boiled or roasted. *The plethoric*, or those who abound with blood, should eat sparingly of whatever is in a high degree nourishing, as fat meat, rich wines, strong ale, &c. Their aliment should consist principally of bread, or other vegetables, and their drink of water, whey or small beer. *Persons of a thin habit* ought to follow a course directly opposite to that before suggested. Those who are troubled with acidity (gouty, hysterical and hypochondriacal persons) should live chiefly on solid meat; should avoid all flatulent food, as also all salted or smoke-dried provisions, and whatever is difficult of digestion, or apt to turn sour and rancid on the stomach. *Those of a sedentary life* ought to be more sparing as to quantity, and more attentive as to the quality of their aliment, than those who take much exercise; and ought to avoid the use of every thing which is sour, flatulent, rancid, and oppressive to the digestive organs.—*Willich.* Such as toast and butter, new or sour bread, baked fat meats, pie-crust, cheese, &c.—*T. C.*

*The aliment in early life*, ought to be light, nourishing, and taken frequently, but in moderation. That of adults should be solid, and sufficiently tenacious: the diet proper for those advanced in life, should resemble that of infancy.

With respect to the quantity of food, there is one general rule, which ought never to be disregarded; namely, to cease eating when the first cravings of appetite are satisfied, so as to renovate the waste which the body has apparently sustained. By a strict adherence to this principle, many of those distressing complaints, arising from intemperance, might be effectually obviated.—*Willich.* Not less than six hours should intervene between meals; seven hours interval is not too long, but this should not be exceeded.—*T. C.*

*Indigestion (dyspepsia)* is produced by too much food; by too stimulating food; by stimulating drinks; by unwholesome food, hot bread, &c. by want of exercise; by grief; by the use of tobacco, or other narcotics. Cure: abstain from the causes. Take moderate purges; use little wine or spirits; eat no supper; use exercise.—*T. Cooper.*

*To preserve apples*—Wipe them dry, and keep them in a dry cellar of uniform temperature, on shelves, in the dark. Or keep them in earthen jars, with cuttings of paper from the book-binders intermixed. Grapes, in particular, may be thus kept.—*T. C.*

## SALTING MEATS.

*Salted meats* lose much of their nutritious properties, and are rendered more indigestible withal, by giving them too much salt in the curing process. Salt, in excess, destroys the gelatinous particles, and renders the flesh tough and hard. The use of salt is to preserve meat, and of course no more should be applied to beef, mutton, and the lean of pork, as hams, than will barely answer the desired end. Salt petre is a powerful antiseptic, and sugar and molasses are also so, and they contribute to keep the meat tender and juicy; and where they are used in combination with salt, they lessen the quantity required of the latter. There is therefore economy, as well as pleasantness, in combining them. We have for many years followed this suggestion, and kept our meats tender, sweet and nutritious. The materials may all be combined in the

*Knickerbacker pickle*—which is made by dissolving, by boiling, 6 lbs. of salt and 3 oz. salt petre in each gallon of water required to cover the meat, when it is close packed in the meat tub, to which a quart of molasses may be beneficially added. Skim the liquid, when boiling, and turn it on the meat when it is cold—and put a weight on the meat, if necessary, to keep it covered with the liquid. We have sometimes combined the salt and salt petre, both pulverized, with the molasses, and applied them without water, by rubbing each piece of meat well with the mixture, and packing it close. There should be a spigot near the bottom of the tub, in order that the liquids which settle may occasionally be drawn off and thrown upon the top. Meats prepared thus keep well till spring, when they require a pickle, and are of much richer flavor than those cured in a pickle. The pickle we have named serves alike for our hams and beef, and makes them neither too salt, nor leaves them too fresh, to suit the palate when cooked. No bloody meat should be put into the cask till it is perfectly cleaned.



## TIDE MILLS.

A correspondent, who dates Talbot county, Md. asks for information on this subject, viz:

A description of the location, the rise or fall of tide, the quantity or number of acres enclosed, or space occupied by the pond or creek, the strength of current, kind and expense of improvements, profits of establishment, &c. &c.—in fine, a full description in relation of this kind of mill.

As the information asked for is not within our reach, we shall be very much obliged to any gentleman competent to give it, to furnish it for the Cultivator.

## INCOMBUSTIBLE WASH, AND STUCCO WHITE WASH.

The two following recipes are valuable, if they will answer the purposes described, of which there seems to us to exist a strong probability:

"The basis of both is lime, which must be first slaked with hot water, in a little tub or piggion; and covered to keep in the steam; it then should be past in a fluid form, through a fine sieve, to obtain the flour of the lime. It must be put on with a painter's brush—two coats are for the outside work.

"*First.*—To make a fluid for the roof and other parts of wooden buildings, to render them incombustible, and coating for brick, tile, and stone work, and rough cast, to render impervious to the water, and give them a durable and nice appearance. The proportions in each receipt are five gallons. Slack your lime as before directed, say six quarts, into which put one quart of clean rock salt, for each gallon of water, to be entirely dissolved by boiling, and skimmed clean, then add to the five gallons one pound of alum, one-half pound of copras, three-fourths of a pound of potash—the last to be gradually added: four quarts of fine sand, or hard wood ashes, must also be added, and coloring matter may be added in such a quantity as to give it the requisite shade. It will look better than paint, and be as lasting as slate. It must be put on hot. Old shingles must be first cleaned with a stiff broom, when this may be applied. It will stop the small leaks, prevent moss from growing, render them incombustible, and last many years.

"*Second.*—To make a brilliant Stucco White Wash, for buildings, inside and out. Take clean lumps of well burnt lime: slack the same as before, add one-fourth of a pound of whiting or burnt alum pulverised, one pound of loaf or other sugar, three points of rice flour, made into a very thin and well boiled paste, starch or jelly, and one pound clean glue, dissolved in the manner cabinet makers do. This may be applied cold within doors, and warm outside. It will be more brilliant than plaster of paris, and will retain its brilliancy for many years, say 50 or a 100. It is superior: nothing equal. The east end of the president's house at Washington is washed with it."

The anniversary address will be delivered before the New-York State Agricultural Society, on the first Thursday in February, by the president, Dr. J. P. Beekman.

We acknowledge the receipt of seeds of native plants from S. M. Stevenson, or rather from Mrs. Stevenson, of North Lake, Mich. for which the lady well please accept our thanks. Among them are seeds of three species of the wild pea, similar to the vetch of Britain. These may become an acquisition to our agriculture, to be cut as green food; and as they are indigenous, must be better suited to our climate than varieties from Europe.

The Conductor's brand has been used, without his knowledge, upon barrels of Italian Spring Wheat, sent to the south. Although we have full confidence in the honest intentions and integrity of those who have thus used our name, it is proper to say, that we have had no interest, and do not assume any responsibility, in the transactions in this article.

## CORRESPONDENCE.

## RUTA BAGA.

The culture of roots, and more particularly the Ruta Baga, for stock, appears to be gaining ground yearly, and their value better understood.

The prejudice against *book-farming*, is giving away, and the advantages of agricultural papers are better appreciated. The directions laid down for the culture and management of the Ruta Baga, in the 4th No. 1st vol. page 51, of the Cultivator, has induced many farmers to try the "experiment" by putting in a fourth of an acre, and some have mustered courage enough to put in from one to two acres.

When the directions have been followed closely, success has generally attended them. A partial failure of the first crop should not deter them from a second attempt.

The first crop I undertook to cultivate (1834) was a failure, for on two acres I only gathered 315 bushels.

Having then but little experience in farming, and not sufficient confidence in my own abilities, to undertake their culture, I employed an Englishman, who said he understood the process of sowing the seed, and after culture. He pretended there was great art in putting in the seeds, and

from his movements I began to suspect there was, for it took him over two days to sow the seed.

When weeding and thinning time arrived, I employed him again, which took him fourteen days. He was employed at the after dressing, and harrowing. The produce was as above stated. This, I thought, rather an expensive crop; however this failure did not discourage, but rather stimulated me to greater exertions.

The following season I was determined to try and see what I could do, having profited by the experience of the former year. I sold my English Drill and had one made, of my own construction, of which my present Drill is an improvement. The ground was in the same field, and adjoining where I had them the previous year—it was well manured and prepared, and on the 22d of June, I drilled in the seed, which occupied three hours.

When in the third leaf they were carefully weeded and thinned out, and the plants left from eight to twelve inches in the rows. The rows three feet asunder. The cultivator was run through them at intervals several times, and dressed with the hoe twice after. From this piece I took off over 1600 bushels—many of them weighing 20 lbs. and one weighing, with the tops on 26½ lbs. and without the tops 24½ lbs. I mention this as an offset to a communication in the 48th No. of the Genesee Farmer, over the signature of "Fred. Suter," of Ancaster, Upper Canada. His wonderful turnep weighed 19½ lbs.

The same season I had seven acres in Ruta Baga's, on the farm I now occupy, which averaged 500 bushels to the acre. They were not as large, but of superior quality. Since then I have had no difficulty in managing the crop, although I have never been enabled to grow them so large, nor do I deem great size of much advantage.

The Ruta Baga delights in a sandy or gravelly soil. In a stiff clay or wet soil, they will not flourish. Of the truth of this, I had ample proof the past season. A part of the field I cultivated, was rather tenacious, and stiff, although it received the same quantity of manure as the other part, which was a loam—the roots on the clay soil were very small and the plants had a sickly appearance during the season. From a little over 2½ acres I took 1,400 bushels.

On a part of the field I tried, as an experiment, bone dust, sown broad cast, and harrowed in at the time of drilling in the seed, at the rate of 25 bushels to the acre. The result proved favorable. I also tried ashes, but without success. The plants were sickly and the roots very small.

I urged some of my neighbors to try the cultivation of the Ruta Baga, and as an inducement, offered to loan them my drill, to sow the seed. For information of their culture, I referred them to the Cultivator. None were more successful than my neighbors, the Messrs. Bullocks. On a little over four acres they took off more than 4,000 bushels, and when pitted the mounds were as thick as hay-cocks in some meadows.

A correspondent, in New-Jersey, writes me that having sold his farm, his Ruta Baga patch, consisting of two acres, was sold the 5th of Oct. last at auction, for \$176! Allowing nine cents per bushel, which is low for them, there must have been nearly 2000 bushels. This would afford him a good profit, for they can be grown at an expense of four cents per bushel.

I feed them to my cattle, sheep, horses and swine, who become remarkably fond of them. For young cattle and sheep I consider them invaluable.

At Hosick, on the farm of H. D. Grove, esq. I saw several patches of good size, and promised an abundant crop. Mr. G. thinks them of great value for his sheep.

In a short tour to the north and east last fall, of some thirty miles, I was much gratified to observe a commencement of their culture, however limited. No class of men are more cautious, or more suspicious of innovations or new improvements in their art, or profession, than the regular bred farmers. And it is proper that it is so. One great cause of the failure of the crops, with new beginners, is, they are not particular to thin them out sufficiently; the consequence is, they run up to tops, and the bottoms, if any, are small. Another cause is, the soil is not properly prepared. In many cases, it will require, after having been well ploughed, to be stirred with the Cultivator, rolled and harrowed until it becomes well pulverized and mellow—the harrow should be used just before the seed is drilled in. By this means I find the after culture much diminished.

CALEB N. BEMENT.

Three Hills Farm, Dec. 1837.

## PROFITS OF FARMING.

Ithaca, December 10, 1837.

J. BUEL, Esq.—Dear Sir,—In August, 1836, B. Wood, Esq. and myself purchased a farm of 100 acres, seventy acres of which was under improvement, in the town of Dryden, at what was considered a large price for a worn out farm, as that was called. The farm was managed by Mr. Wood for our joint benefit. An accurate account was kept of all expenses, as one-half was to be charged to me. The season is now over and we have just balanced our accounts, that we might know how we stood in our farming speculation; and as the result is satisfactory, I communicate it to you as another evidence, that capital may be profitably invested in agricultural pursuits. The account is as follows:

DRYDEN FARM.		Dr.	Cr.
1837.	To expenses of ditching, repairing buildings, &c. ....	\$59 76	
	To expenses of repairing fences, cultivating farm, furnishing seed, securing crops, preparing crops for market, conveying them to market, &c. ....	373 74	
	By one pasture lot rented out, at \$18, ....		18 00
Oct. 2.	By 148 bushels of potatoes, at 2s. ....		37 00
" 26.	" 114 " buckwheat, at 3s. 6d. ....		49 87
Nov. 3.	" 100 " wheat, 12s. ....		150 00
" 24.	" 450 " oats, 3s. ....		168 75
" 24.	" 50 " corn, 6s. ....		37 50
" 24.	" 50 " ruta бага turnips, 1s. 6d. ...		9 37
Dec. 1.	" 30 " tons of hay, 40s. ....		150 00
	" growth on young stock, horses and cattle, amount received from other small items, ...		65 00
	To one years interest on \$2,500, or cost of farm, ....	175 00	
	To balance to new account, ....	91 88	
		\$700 38	700 38

Dec. 10. By balance from old account of profits of the farm, 91 88

So you see that we have been able to pay all expenses of the farm, \$59.76 for useful improvements, seven per cent interest on the capital invested, and have a balance on hand of \$91.88, or in other words, our investment has yielded 10½ per cent interest, and our farm is left in a condition to do at least three per cent better next season than it has this, if the season is equally favorable. If you think any benefit will result from publishing the account of our small experience in farming in your valuable paper, you are at liberty to do so.

The Dutton corn answers my utmost expectation. I had a piece that yielded me at the rate of eighty bushels per acre, of as sound corn as I ever saw, and was ripe by the middle of August. I am keeping 100 bushels for seed. And the Berkshire pigs that I received from C. N. Bement, Esq. are admired by all who see them; they are certainly the finest animals of the hog species that I ever saw.

Very respectfully, your obedient servant,

E. CORNELL.

P. S. The above is a practical illustration of the benefits that result from keeping farm accounts. E. C.

#### STEAMERS—ROTARY STEAM ENGINES—MANURES.

Buffalo, Nov. 22, 1837.

MY DEAR SIR—In the Sept. No. of the present vol. of the Cultivator, there is an admirable plan for a *cheap* steaming apparatus, which it would be for the advantage of every one keeping 8 or 10 hogs. to use for steaming all the food to be given them. But I should like to see something more perfect than has yet come under my observation, which shall, without too much expense, and without liability to get out of repair, cook a larger quantity of food in the shortest time, and with the smallest quantity of fuel. It appears to me, my dear sir, that this is now the *great desideratum* for every one who has much stock of feed. Every person is convinced of the great advantage of grinding their grain before feeding it, yet after it is ground, without subsequent cooking, it will yield only a part of its nutriment. Now *steaming*, if it can be done effectually, will not only answer the purpose of both grinding and subsequent cooking, but add, also, materially to the quantity of food which can be used, besides effecting a larger saving of labor. I will illustrate this by an example. With a boiler of sufficient power to generate steam to 400° or 600° of Fahrenheit; a furnace so constructed as to apply fuel in such a way as to produce this heat, and a vat sufficiently capacious to hold a large quantity of food, and *hold the steam at the above temperature*, corn can be cooked *on the cob, and in the husk, in a few minutes*, by which all the labor of husking, shelling, sending to mill, and loss of toll, will be saved, while the husk and cob is added to the mass of food, and contributes materially to its value by making it lighter and less cloying to cattle. The stalks can then be steamed whole if required, or which would be preferable, after being cut into pieces suitable for feeding. I have seen no account of any such experiment; but it is my opinion that *one* acre so used, would be worth more than *two*, perhaps *three*, fed in the ordinary way. In the same manner oats, barley, buckwheat or any other kinds of grain, may be steamed so as to extract every particle of their nutritive qualities, and without any expense of threshing, milling, &c. The saving in all vegetables fed to swine would be proportionable great, and their nutrition would be much increased for feeding cattle. If hay also can be cooked to advantage, and I doubt not it can, the value of such an apparatus would be vastly enhanced. When we consider the importance of this subject, it is a matter of surprise that no premium has yet been offered for a perfect apparatus, by any of our societies, agricultural or mechanical, numerous and enlightened as they are throughout the country; but in the absence of any such premium, there is sufficient inducement in the profit

in manufacturing and selling such as could be warranted durable, effective and capacious, and at not too great a price, to justify any ingenious and enterprising mechanic to perfect one.

The boiler shewn in the Cultivator, vol. 2, No. 7, seems to me perfect enough. The material for it, as well as the cocks, should be strong and durable, and the size proportioned to the use required.

The furnace should be so constructed, especially when wood is used for fuel, that in addition to exposing all the bottom of the boiler to the fire, the *flue should pass once entirely around it* in an ascending direction, so as to expend all the heat on the boiler; and this may be done with brick, or I think more effectually, by a flue to fit the boiler made of thick boiler iron. This would allow the smoke and flame to pass off readily and without incurring any risk from the carelessness or botching of masons.

The only thing that remains then, is to deliver the steam into a vessel suitable for holding the food to be cooked. And *here* it is especially, that we want the aid of science and experience. A reservoir of copper or iron would undoubtedly answer the purpose; but if we are going to cook on a large scale, stalks, hay, &c. we require a *great deal of room*, and besides the exposure to corrosion in using metals, it would be too expensive. If we wanted only a temperature of boiling water, or 212° Fahrenheit, most kinds of wood would sustain this heat and pressure; but to accomplish our purpose effectually and speedily, we require a temperature twice or three times as high. Can oak, or pine, or cedar sustain it? Here we must have *absolute certainty*; we must know what kinds of plank are suitable, and what thickness—how secured, by iron clamps or otherwise, and how much this strength is to be increased for every increase in size. The form should, I think, be an oblong box, and for a moderate size the one before referred to is of a proper kind; if enlarged considerably, it should be made longer and larger, and open at both ends. We want the exact proportions. Is it necessary to carry off the condensed steam, and if so, in what manner? The foregoing seem to be the essential features to be established relative to this subject, and are they not worthy to be solved in the most scientific and satisfactory manner? Who that has 15 or 20 head of any kind of stock to feed, would hesitate to give 50, 100 or even \$200, for a cooking apparatus, that with a little addition of time and fuel will save him half his food, or with the same quantity will enable him to keep twice the number of cattle? Let such an one be made, and my word for it, the inventor will have as much call for it, as Dr. Nott had for his celebrated stoves. I conceive such an improvement to be of far greater value than all the inventions of ploughs, harrows, horse rakes, mowing and threshing machines, *et id genus omne*, that have been constructed, and patented, and exhibited, and talked about, and cost so much money within the last ten years.

Here I will just allude to two other important appendages to a large farming establishment. The first is a small simple rotary steam engine, to be propelled by connecting it with the boiler heretofore described. Let this occupy a central position, between the barn, the pump, the wood-house and milk room, and by connecting bolts or shafts, it hardly matters how long, it can, for a trifling expense, be made to thresh all the grain, cut all the fodder, pump the water, cut the wood, turn the grindstone, churn the milk, press the cheese, and do any other work within its reach. Engines every way adapted to this purpose, ought to be kept for sale with other farming utensils, where they can always be had at a moderate price.

The other and only subject I will mention is a *stercorary*, and as every man who reflects on the subject at all cannot fail to be convinced of their great utility, I shall confine myself to a few queries.

1st. Can there be a more suitable place for it than an excavation under the stable, which shall receive the manure from above through a trap door?

2d. Is a stone wall laid in mortar sufficient to retain all the moisture and salts that are liable to escape laterally?

3d. Is a *stiff clay* bottom and sides sufficient for the same object?

4th. What would be the effect on the timbers and plank, not coming in contact with the manure, but exposed to the effluvia, and what kind of timber will best resist this deleterious influence?

5th. Should there be any ventilation to it, and how much?

A full answer to all or any of the above suggestions, will confer a general benefit on the community, and particularly oblige,

Yours, very truly,

JUDGE BUEL.

R. L. ALLEN.

#### REMARKS.

There are some points in the above which seem to demand *our* attention; but our remarks must be brief. And first, we are inclined to believe, with Mr. Allen, that thorough steaming, will supercede the grinding of grain for farm stock—it will burst the globules which contain the dextrine—to profit by a recent discovery—the nutritive matter of the grain. 2d. We do not like the flue around the boiler—the whole boiler, except the upper rim, about the flange, should be exposed to the flame. The brick work may be conformed to the shape of the boiler, leaving an interval of four or five inches between them; the bottom of the wood grate may be two to four inches above the bottom of the kettle with an ash pit below—the flame then comes in contact with the exterior of the boiler,



and produces a much stronger effect than when confined to a flue. 3. In regard to the rotary steam engine—we believe it can and will be made subservient to all the stationary purposes of the farm, where water, wind or horse power are not preferred. The same power, we have little doubt, will soon be employed to propel all the stationary machinery of the farm. 4. As to manures, we would have no stercorary. We would prefer, to it, under the stables, a cistern, for the liquid manure only. We hold that all winter made manure should be applied in spring, to hoed crops, before fermentation has progressed far. That coming from the stables may be benefitted by being kept under cover, though we think it equally serviceable to have it spread in the cattle yard, that it may be mixed with its litter, and subjected to the tread of the cattle. It will then neither become fire-fanged, nor undergo excessive fermentation, before it can be employed for the hoed crop. But if stercoraries are used, under beams, stone walls, in a clay soil, and a stiff clay bottom, will, after a little time, become sufficiently retentive to prevent the loss of liquids; but ample ventilation is required to prevent the rapid decay of the timber and plank of the floor. Give no air, says our friend Tomlinson, or give a free circulation, if you would preserve wood in floors.

## HEDGING.

Poolesville, Montgomery co. Md. November 20th, 1837.

MR. EDITOR,—Dear Sir,—Having noticed several articles in the Cultivator on the subject of hedging, none of which I think are well calculated to assist and encourage those who wish to commence the business. Having had some experience myself in thorn hedging, I will endeavor to give you the process from first to last, for the benefit of all who wish to try it. I obtained the information from an Englishman about twenty-five years ago, who had devoted his attention to hedging in this country. The sprouting process I purchased as a secret, which I agreed not to divulge so long as he lived in the settlement; he is long since dead, so I am released, and cheerfully give the information. The berries should be gathered when ripe, and spread on a loft, where they may remain until about the first of February, when they must be soaked until the pulp becomes soft, which will only require a few days in a cellar; then they must be carefully mashed, so as not to break the seeds, and the pulp washed off by rubbing the seed in a vessel of water, and pouring off the pulp until the seeds are perfectly clean; in this moist state the seed must be kept in a tight vessel, in a cool and damp place, covered with a wet cloth, and turned upside down, or out of one vessel into another, about once a week, or as often as necessary, to prevent them from becoming too dry on top. As early in March as in the season will admit a seed bed must be prepared, which I would advise to be new land, inclining to be a little moist. If the ground be burnt first so much the better. About this time you will find the seeds begin to burst; as soon as they generally begin to open and some to sprout, sow them broad cast, pretty thick, and cover them about one inch deep, by taking the surface earth with a spade, or shovel, out of trenches, wide enough for a man to stand in, at the distance of four feet apart, through your bed; which trenches serve to stand in to pick the weeds from the young plants, which must be particularly attended to, as the plants at first are very tender, and would be lost by letting the weeds overrun them at first. If the weather is favorable, and the seed in a proper state, they will be up in a week, and will grow the first season from twelve to eighteen inches high, the largest will do to plant in hedge the next spring, and the balance the spring following. I would here remark, that I have only used the Maryland or Virginia white or hawthorn, which are five-seeded small red berries, but I have no doubt that the same process would have the same effect with the other varieties.

The next thing to be considered is the planting. The line on which to plant the hedge should be cultivated the season previous to planting, to prepare it for the reception of the quicks the following spring. As early in spring as the land will admit, stir the line with the plough and harrow, then draw a deep and straight furrow with two horses, in which to set quicks, having the quicks prepared for planting, which is done by chopping the tops off three or four inches above the root, also the long ends of the roots; they may be set against one side of the furrow, eight inches apart, which I find by experience close enough, and the furrow filled with the surface earth, and pressed to the roots with the feet, having one on each side, in this way a great deal may be done in a short time. The young hedge should be kept clean with the plough and hoe for several years, and must also be protected from stock, until it gets above their reach, especially early in spring, as cattle are very fond of browsing the young thorns. In six or eight years in good land with good nursing they may be plashed, which completes the fence. This operation is performed by commencing at the south or west end of the line, according to the direction it may run, and laying them down on the north or east side. Have stakes prepared, one end pointed, about four and a half feet long, they are to be driven in a line about one foot from the line of the hedge, from thirteen to twenty four inches apart, as the work progresses. First trim off the brush which will be in your way, then cut the stalks about two-thirds off, near the ground, or until they will bend down, beginning a little above ground, and chopping downwards, then cut the stumps smooth upwards. The stakes are driven firm as the work goes on, and the thorns laid one over another be-

tween the stakes; this will leave the stumps on the sun side, and clear of the brush, and will raise as high as the stakes when the hedge is laid down to complete it; it will be necessary to wattle two small poles, split will do, along the top of the stakes, to keep all in place; these stakes and wattling will last until the hedge has grown strong enough to require no further support. When the hedge is laid down as above, it will turn any kind of stock except hogs, and it will be very difficult to make any hedge a complete barrier against these animals, as they will push through without regard to the spines. The young growth, which will put up from the stumps and stalks, must be cut every year, and not suffered to grow higher than you wish your fence. The thorn is very tenacious of life, and the beginner need not apprehend any danger of their dying from cutting them as above directed. Plashing should commence as soon in spring as the frost will allow the stakes to be driven. A man will plash from eight to ten rods per day. The hedger must be provided with leather mittens, and an instrument for cutting, something like the following.\* This should be about five inches long in the blade, from three to four inches broad, of good substance in the middle, and brought to an edge on both sides. The hook also must have a continued edge, like a hook bill knife; the fork in the end is useful in placing the thorns; the shank is for the handle. Thus I have given you practice in hedging as well as I am capable; you may dispose of it as you think proper.

Now, sir, I think the Cultivator a very valuable periodical, well calculated to improve American husbandry, which certainly is in a wretched state, shewing almost every defect and also the remedies. But how can I avail myself of all those advantage, and others in my situation, being possessed of a worn out gravelly and watery farm, which will yield no surplus for experiments or improvements? But still remain a constant reader and well wisher of the Cultivator.

JOHN A. CHISWELL.

## BAKEWELL SHEEP.

Albany, Nov. 23, 1837.

J. BUEL.—Dear Sir,—In perusing your valuable paper, a communication from Mr. Cliff struck my attention, wishing you to contrast the difference between his Lincoln and Leicester sheep. I do not feel satisfied in letting the latter be so much degenerated without comment. Having had much experience in cultivating that breed in England, and from that I feel assured there must be some mismanagement, imprudent selection of rams, or his original ewes inferior, to allow Bakewell's improvement in fleece to be lowered to 3 lb. 12 oz.

Before you make your distinction, allow me to refer you to the flock of Thomas Dunn, Esq. of this city; though not thorough bred Leicesters, differ but little; one cross from the Cotswold has given them a little more wool and constitution; a judicious selection of rams has yearly improved his fleece and carcase, and should the next three years' improvement be equal to the past three, I have a favorable opinion that his flock will be equal to any in England; and I have no scruple in saying, they are now superior to any other flock in this country. I have viewed his last spring lambs with gratification, and think they will bear the inspection of the most experienced judges, who, I have no doubt, would grant, that much merit is due to him for his exertion to improve. He has given me a statement of fleeces of his yearling rams, which are as follows:

2 yearlings, .....	22 lbs.
4 do. ....	42 lbs.
4 do. ....	36½ lbs.

10

100½ lbs.

averaging 10 lbs. each. When he has weighed his whole cut of wool, I will endeavor to send you the average.

I feel inclined to believe that Leicesters are valuable, but may be improved with a cross with the Cotswold, and if reduced to a small size and light fleece, a cross with the Lincoln would much improve them.

The admiration T. D.'s six weathers excited in the Albany market, on the 22d of February last, added much to the credit of his flock: their quality of mutton, smallness of bone, with a heavy carcase, were considered very superior by all who saw them.

Six more of his weathers were sold to Mr. Fitzgiles of New-York, in March, for twenty-eight dollars each, which is positive proof that Leicesters are valuable.

I am, dear sir, yours most truly,

WM. HENRY SOTHAM.

P. S. Since writing the above, I have had a communication from Mr. John Wilkinson, of Duaneburgh, stating that his flock of Leicesters cut a little over 6 lbs. on an average.

[Mr. SOLON ROBINSON will please accept our grateful acknowledgments, for the box and contents described below, which have come safely to hand. Mr. Robinson is located in the north part of Indiana, near Lake Michigan. The liberal example of Gen. Cock, and of Mr. Robinson, in

\* The cut was forgotten till too late, but will be given in our next.

endeavoring to disseminate the good fruits of the earth, and thereby to multiply the comforts of the human family, is deserving of high commendation, and of general imitation.]

Lake C. H. Ia. Sept. 22, 1837.

J. BUEL, Esq.—This box contains a specimen of cultivated soil, of Robinson's Prairie, Lake county, Ia. and a specimen of the subsoil, two feet below the surface, and a specimen of the under stratum, ten feet below the surface, below which is a bed of beach sand, in which water is found at various depths.

Also, a few Nutmeg and Mackinaw blue potatoes—both very early, the Nutmeg particularly so.

Also, a specimen of "Lake Superior Indian Corn," grown between the 20th of May and 20th of August, 1837, in a cold piece of ground, without manure, in Lake county, Ia. (latitude 41½.) This corn is principally useful for early garden culture, growing small and low, as may be seen by one of the stalks which is herewith sent, and which shows a fair sample of size.

Also, a specimen of black corn—known here as "Squaw Corn"—requires a very short season and produces well.

Also, the product of a single seed of timothy, sent to forcibly illustrate the remarkable increase of agricultural products. I hope this seed may be sown by some one who will notice the increase for two or three succeeding years.

Also, a few nuts and small branches and leaves of the northern or upland bur oak. The rich taste will best demonstrate their nature as nutriment for hogs.

And finally, a few native crab apples—just to show that although in a new country, we are not entirely destitute of apples. This kind are abundant. Also, a very delicious plum—purple and white. A few stones of the latter are herewith sent. They grow wild, about an inch in diameter.

I beg another year's grace on "Prairie flower seed." Accept the useful first.

I am, as a friend of agriculture, most respectfully your friend,  
 SOLON ROBINSON.

#### REMARKS.

In the *Nutmeg* we recognize our *early kidney*, and in the *Mackinaw blue* our *Sault St. Maria* potatoes. The first is our best early variety, and we will hereafter call it the *Nutmeg*. In our November number, we have classed the *Sault St. Maria* among our most esteemed varieties. Both varieties are new among us.

The stalk of the Lake Superior corn is about three and a half feet long, and the ears six inches. Its early maturity may render it valuable in the higher and colder districts of our state. The ear of the squaw corn is about ten inches long, and may also be valuable for its precocity.

The seed of the head of timothy half filled a wine glass. It is a beautiful specimen. We have sown it.

The nuts and leaves of the oak strikingly resemble those figured and described by Michaux, as the *over-cup oak*, (*Quercus lyrata*.) known in the southern states, where it most abounds, under the different names of swamp post oak, over-cup oak, and water white oak. The tree grows there to the size of the largest forest timber. There is no other oak which bears a resemblance to this. The nuts sent us are almost as sweet as a chestnut, with a slight astringency, and the edge of the case is beautifully fringed. The bur oak of Michaux is synonymous with over-cup *white oak*, (*Quercus macrocarpa*;) the nuts are shorter than those sent us, and are almost wholly enveloped by the shell, which latter is wholly free from fringe or moss. We have planted most of the acorns sent us, together with the plum stones. This is either the over-cup oak of Michaux, or a species allied to it, which escaped the research of that naturalist.

☞ The seeds not planted, as well as the remains of the barrel of early May wheat from Gen. Cock, will be distributed at the anniversary meeting of the State Agricultural Society, in February.

#### MACHINE FOR UNLOADING HAY.

Lee, November 27th, 1837.

DEAR SIR,—Knowing that your valuable publication is a repository for the various improvements in agriculture and husbandry, we take the liberty to send you the following communication, which we trust will be important to the farmers of our country.

Having used "the machine for unloading hay," lately invented by Mr. Luther Miller, a farmer of this town, permit us to give a brief description of its structure, and the mode of its operation.

This machine is worked by horse power, and consists of a rake, the head of which is from three to five feet in length; the length of the head, and the number of the teeth, suited to the convenience of the user. The teeth are of iron or steel, about eighteen inches in length, with a curve of about three inches, and set one foot apart. A handle three feet in length, is framed into the head of the rake; and to this handle a rope is attached, which, after passing a pulley fixed directly over the place for depositing the hay, passes downward under another pulley, usually called a snatch block, fastened about two feet from the surface upon which the

horse stands for working the machine. This rope, after passing under the pulley, is fixed to the horse. Another small rope is fastened to the centre of the head of the rake, by which the machine is guided.

The rake is loaded by thrusting the teeth into the hay, as it lies on the wagon. The horse is then started forward, and the rake with its load ascends; and when it reaches due elevation, the horse is stayed, and the rake disengaged from its load, by drawing upon the rope fixed to the centre of the head of the rake. The horse is then backed to the place of starting, the rake loaded, the horse driven forward, the rake elevated and disengaged from its load as before. One man, with a tractable horse, can manage the whole machine. The hay can be thrown into any part of the mow at pleasure, by fixing the upper pulley directly over the place for unloading.

This machine is of the greatest aid where the hay has been collected with the horse rake. In such a case it is very difficult to unload the hay by pitching in the ordinary way, but by this machine it is done with the greatest ease. This machine can be more extensively useful than the horse rake for collecting hay. The usefulness of the latter is confined to level ground, while the former may be used in every region.

In the course of the past summer, we have unloaded with this machine *half a ton in eighty seconds, or at the rate of a ton in a little less than three minutes.* This was done with a rake of the smallest size, viz. *three feet* in length, and with but *three teeth.* With a larger rake it might have been done in a shorter time. This machine, simple in its structure, and costing not over five dollars, will be found to be a *most valuable labor-saving apparatus*; and we trust highly and extensively useful to the farmer. And we rejoice, that while the manufacturer, and persons in almost every department of human enterprise, are assisted infinitely by machinery, some portion of human invention and skill is turned to aiding the *husbandman*, in his *ancient, honorable, and most important* employment.

Yours most respectfully,

LORIN BUSHNELL.

ASA BUSHNELL.

#### ROOT STEAMER.

Durham, Nov. 27, 1837.

J. BUEL, Esq.—The plan of the steaming apparatus described in the September number of the *Cultivator*, appeared to me so well adapted to the purpose intended, that I resolved to erect one for the purpose of steaming vegetables for the pigs which I fatten for my own consumption, but as I did not find a suitable kettle for the purpose, I hit upon another plan, partly suggested by the plan in the *Cultivator*, which works so admirably that I send you a description of it. I first made me a box 4 feet in length, 20 inches wide and 17 deep, without top or bottom; I then took a piece of sheet iron, 4 feet 4 inches long, and 2 feet wide, which I placed upon the bottom of the box and nailed it fast with common shingle nails, driven through the sheet iron into the edge of the boards, about 1½ inches apart. This left the iron projecting over the box about 2 inches all round. This was then turned up and nailed again, on the sides and ends of the box, so that the sheet iron forms a kind of pan around the box, two inches deep, which will make a bottom sufficiently tight to hold water. I then made a false bottom, full of holes, nearly as described in the *Cultivator*, which I let down so as to leave a space of about one and a half inches between it and the sheet iron. A cover like a chest lid completed the box. I then set the box upon two lines of bricks laid in mortar, with a chimney carried up six feet at the further end, the front end being left open to put in the wood, very much as you would set a kettle—the bottom of the box rested upon the arch about half the width of a brick, and was plastered round with mortar, so as to confine the heat to the sheet iron bottom. A few bars of iron were laid across the arch for grates to hold up the wood and bring the fire in close contact with the box. I then put sufficient water in to fill the small space between the sheet iron and false bottoms—fill it up with apples, potatoes, or other vegetables, and it is ready for steaming. A box of the above dimensions holds full four bushels, and one hour and a half is all the time that is necessary to steam apples and potatoes effectually. With dry hemlock limbs, I have in one hour, steamed them so that those on the top cracked open. There is no danger of the supply of water failing, as I have steamed several kettles full without any additional water. Farmers would probably need a box of larger dimensions—for this purpose they have only to add to the length and depth of it, to get the size wanted. I consider the width named the best adapted for economy in fuel. If any one wished, the box could be made with a sliding end, as described in the *Cultivator*—but I find no difficulty with mine by the filling up of the holes in shovelling out the potatoes, &c. having bored them with a taper bit from the under side.

The advantages of this, over other steaming apparatus which I have seen, appear to me to be—

1st. Its cheapness and simplicity. The principal outlay is for the sheet iron, which can be procured at almost any tinner's shop in the country, for ten or twelve shillings, and a few nails and boards—stone may answer the same purpose as brick to set it upon, and any person can make and set it.

2d. A saving in fuel—the fire being brought so near the water, which



is spread out on so large a surface, and the iron thin, it heats so as to throw off steam in a few minutes, and continues to throw it off in large quantities, with only a small fire.

3d. The vegetables are all steamed alike, the steam being thrown off from the whole surface of the water, passes up through the false bottom, to every part of the box alike.

I have also very little doubt but the apparatus will be durable.

If you consider this improvement of any advantage to farmers and others, you can give such a description of it in the Cultivator, as will enable them to take advantage of it. Though not a farmer myself, I conceive it the duty of every one to do all that he can to promote and encourage that all important branch of human industry, especially at a time when the rage for speculation, or other less important pursuits has drawn off so large a portion of young men and others from the cultivation of the soil, that our rich and agricultural country cannot raise her own bread stuff.

Yours respectfully,

A. MARKS.

P. S. By having the box made water tight, it may serve a very valuable purpose for heating water to wash, or for scalding hogs, &c. the water heating remarkably quick, and at little expense of fuel compared with heating it in common kettles, over stones and fire-places.

#### ITALIAN vs. SIBERIAN WHEAT.

JUDGE BUEL.—Dear Sir: I have seen the Cultivator for December, and notice a letter bearing Doct. Goodseil's signature, announcing his result in raising the Siberian wheat, and speaking in very disparaging terms of the Italian spring wheat. I would not in an ordinary case trespass upon your time or columns, but feel that this attempt to put down the reputation of the Italian wheat, is unjust and unsustained by the experience of one in a thousand.

The public have a deep interest in this matter, and would doubtless have read his letter with satisfaction, were it not apparent that it was written with the view to establish a character for his *favorite*, at the expense of a *favorite* with them;—which of these varieties of spring wheat shall best deserve the title of *best*, is yet to be proven, and that, not by an isolated case, but by general experience. It is a matter of moment, that the farming interest should not be put upon a wrong track; but in this instance, the Doct. will have an "uphill business," to convince them of the worthlessness of an article hitherto highly prosperous, an article that has been grown by more than 4000 of them the past season, in this county, and now actually furnishes excellent bread to more than half our whole population, and that too, in numerous cases, from impoverished lands, that would not yield a crop of oats. *This property alone* should give the Italian spring wheat a name above every other, as no other in this country possesses one so valuable, except such as are in common; none other will grow well, and *produce a good crop upon a poor and worn out soil*. It has been grown for five seasons in this county, and has not failed in any, it rarely ever rusts, although winter wheat is ruined all around it; it has justly obtained an enviable popularity, as the Doct. knows, as a sure crop, a good crop, and a larger;—it is the only article about which there was scarce a difference of opinion, until the letter in question—here it will effect little—abroad it may prevent a million from enjoying a certain good, which unlike the other, has not yet to *establish* a reputation. A "single swallow does not make summer"—nor the yield of a single field fix unqualifiedly a character. Many folks make wild *guesses*; the Doct. says his Quaker friend "*thinks*" that he shall thresh nearly or quite 40 bushels Siberian from one bushel sown. Now this is great, if he has *guessed* truly; yet I can tell him of a man who says he sowed but half a bushel of Italian wheat on an acre of land, and that it yielded him 30 bushels after threshed, and his account is not *guess* work.

Italian wheat is somewhat shrunk this season, but far less so than winter wheat, and it is only that which was blown down and lodged, so far as I have heard, that was much shrunk. The Siberian, it seems, shrinks also, by the account given in the letter, and like other wheats, is liable to "the thousand ills that wheat is heir to"—saving and excepting the *bug*, which looked so like a "bed-bug," a harbinger of "weal or woe"—perhaps to nobody. We shall look for the honest result next year.

J. H. of Oneida.

#### TRAINING VINES.

New Haven, (Conn.) March 13th, 1837.

JESSE BUEL, ESQ.—Sir: I have had the Isabella Grape in my garden since 1819; but the crop of fruit has not been good and full, oftener than once in three years. The failure has usually been caused by the *rotting* of the green fruit, about the time it attains its full size. Every means of prevention that I could find any where suggested, has been faithfully tried; such as long and short pruning and no pruning—thick and sparse, upright and horizontal training—topping the fruit branches, thinning them out, plucking the leaves, &c.—without any perceptible benefit.

But having read, or been informed, (I cannot say which) that in the vineyards of Madeira, the vines are trained on a horizontal arbour, about three feet high, in such manner as completely to shade the whole ground, it occurred to me that it might be important, where the summer sun is

very powerful (as with us) to shade the roots of the vines. To ascertain the effect of such a protection of the roots, in the fall of 1834, I pruned about 20 young vines, which had grown at random, so as to leave from 5 to 8 branches, spreading all ways from the centre or root, like the spokes of a wheel, about 4 feet. These I tied up to stakes set in a circle around the vine, leaving the branches from 12 to 18 inches from the ground. The vines were left in this state to grow as they would—and by mid-summer (1835) they completely shaded the ground, for 6 or 8 feet from the centre. *No fruit rotted on these vines.* The experiment was continued upon the same vines through the last season, and with the same result. During both seasons the fruit on vines trained upon an upright trellis, (the roots of course exposed to the sun,) has been in a great measure *lost by rotting*.

This experiment I should consider decisive, but for one circumstance; the vines first mentioned were *young* and the others *old*. Whether this has affected the result, is yet to be determined.

I ought perhaps to remark (what I was not prepared to expect) that the fruit ripened on the vines, shaded as before described, a fortnight earlier than on the others, and was in every respect better. N. D.

October 10th, 1837. The experience of another season gives the same result stated above, except that none of the grapes ripened, being destroyed by the frost, October 4th-5th. To ascertain the effect of the vine's age upon the fruit, I trained a vine upon a trellis, last spring, of the same age with those whose roots have been shaded, and the fruit upon it has been much mildewed and considerably rotted, while the fruit on the other vines has been bright and sound.

#### TO DESTROY GRUBS.

Killingly Centre, Ct. November 28th, 1837.

JUDGE BUEL.—I have seen a question asked in the Cultivator what would kill the grub worm, the answer was salt, lime and soot. I profess no skill in agriculture; but one day last summer I saw one of my early bush beans was destroyed by the grub worm, the next day there was about twenty eaten off. I then thought I would kill or cure; so I went into the house and took one pint of beef brine, made of clear salt, and added four quarts of water, which I put at the roots of about forty hills of beans; after that there was not another bean eat off. Now could not salt be mixed with manure, that made use of for corn, to keep off the worms. If there could be such a thing, it would be well, I think, to publish it, but not make use of my composition. J. FIELD.

The beans I salted flourished and bore well.

#### INQUIRIES RELATIVE TO DRAINING.

JESSE BUEL.—Dear Sir,—Without compliments I address you, soliciting information on the cultivation of a certain piece of ground, a particular description of which I will give, and in so doing, I shall undoubtedly give a description of other land within the circulation of the Cultivator. The piece of land contains 55 acres 105 rods, north and south; 80 rods east and west, sloping to the west, falling perhaps six inches in a rod, and a little descent to the north. The soil I should call a clay loam, with but very little sand in it, very retentive of water, quite full of small, flat, soft stone, with some hard grey stone, and I presume not a limestone on the piece. The soil is from eight to twelve inches deep, resting on a subsoil of clay and stone, impervious to water. On these high lands we are subject to very heavy showers, in which water will fall several inches deep in a few hours, which, together with the spring and fall rains, and the melting of the snow, occasions a considerable part of it to be so wet with surface water, that it is unfit for ploughing. Now I will give my opinion of the best manner to carry off this surface water, and if I am wrong, my object in writing is to be corrected. It is this: make open drains north and south, say twenty or twenty-five rods apart, four or five feet wide at the top, and deep enough to go into the hard pan five or six inches, with underdrains at proper intervals, and places to take the water down the hill to the west. The object in making the open drains so wide and shallow, is that the banks may not cave and, so that I can drive through them with a team.

I wish to inquire what effect lime will have on such a soil, as it is destitute of it? If thought to be good, how is it to be applied? And what will be the effect of marl, such as was sent you from Cortlandville, containing in 100 parts, 65 carbonate of lime? and how should that be applied? I know from experience that the Onondaga plaster has a good effect, and think every ton used worth thirty or forty dollars. And I can from experience recommend to farmers, to use their manure in their spring, and not let it ferment and rot in their yards.

I had thoughts when I began to write, of making several other inquiries, but I fear I shall tire your patience, so I shall conclude.

Yours respectfully,

LUMAN BARBER.

P. S. The above communication was written before receiving the last Cultivator, in which my inquiries respecting my piece of ground are almost answered, but not quite; my piece is destitute of springs, except near the west side. The strata is different; the soil is very light and mellow when dry, very sticky and clammy if worked when wet. The subsoil is very hard, and rests upon a rock five or six feet below the surface. The rest of my

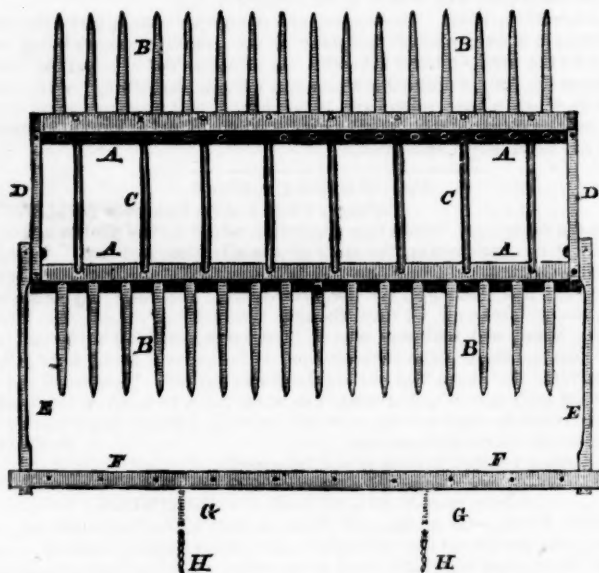
farm is more level, soil and subsoil the same, and I presume the product would be much increased if it could be made dry. Open drains must be much in the way, and under drains I fear would be of no use on such a soil.

L. B.

Summer Hill, Cayuga co. N. Y. November 14th, 1837.

If we apprehend aright the situation of the above described ground, we should substitute covered, or underdrains, for the proposed open drains to run north and south; and open drains on the northern and western borders only. If the surface ascends beyond the south bounds, an underdrain may also be necessary on that border, to arrest the water coming from above. The underdrains should have but a moderate inclination. Marl and mild lime will either of them constitute a proper dressing, when the ground is laid dry. Marl should be laid on, and exposed to the pulverizing influence of a winter's frost, before it is mixed with the soil. We refer, for directions for applying these fossils, to the back numbers of the Cultivator.—*Cond.*

PUDNEY'S REVOLVING HORSE RAKE—Fig. 47.



End view.

Stamford, Nov. 20, 1837.

This rake consists of two heads, A, A, and two sets of teeth, B, B; the heads being connected together by connecting rods, C, C, and end bars, D, D. The end bars also form a groove in which the slide pin, (K, in the end view,) moves from one head to the other, every time the rake revolves. The horse is attached to the rake by hooking the trace chains, G, H, into staples driven into the under side of the cross-bar, F, F. The rake is held by the teeth, which serve for handles when they are up, and for teeth when on the ground.

Yours respectfully,

A. COWLEY, for Pudney & Cowley.

## EXTRACTS.

### HINTS TO STATESMEN.

#### ON THE MEANS OF IMPROVING THE AGRICULTURAL STATE OF A COUNTRY.

"Agriculture is the great art, which every government ought to protect;—every proprietor of land to practise;—and every inquirer into nature to improve."

#### Introductory observations on the Importance of Agriculture.

The prosperity of a nation, possessing an extent of territory, sufficient for maintaining its inhabitants, chiefly depends; 1. Upon the quantity of surplus produce derived from the soil, after defraying the expenses of cultivation; 2. Upon that surplus produce obtaining such a price at market, as will encourage re-production; and, 3. Upon the cultivator having such a command of capital, as may enable him to carry on his business with energy.

1. The surplus produce arises, from that inestimable quality possessed by the soil, which enables it, in proportion as it is skilfully managed, to furnish maintenance, for a greater number of persons, than are required

for its cultivation. Thence proceed the profits of the farmer;—the rents of the landlord;—the subsistence of the manufacturer, and of the merchant;—and the greater proportion of the income of the state. That surplus marketable produce, therefore, is justly considered to be, the principal source of all political power, and of personal enjoyment. When that surplus produce does not exist, (unless in circumstances of a very peculiar nature,) there can be no flourishing towns;—no military or naval force;—none of the superior arts;—none of the finer manufactures;—no learning;—none of the conveniences and luxuries of foreign countries;—and none of that cultivated and polished society at home, which not only elevates and dignifies the individual, but also extends its beneficial influence, throughout the whole mass of the community. What exertions ought not then to be made, and what encouragement ought not to be given, to preserve, or to increase, so essential a resource, the foundation of our national prosperity!

In order to form some idea, of the amount of the surplus marketable produce, on very different soils, under a judicious system of cultivation, the following statements were drawn up by two intelligent farmers, respecting that amount, in their respective occupations, the one possessing land principally clay, the other a turnip soil.

[We omit the details. The clay farm produces, after deducting the total consumed by all the laborers, who subsist upon the produce of the farm, all consumed by the working cattle, and the grain required for seed—and these absorb one-half the produce of the farm—after these deductions, the average product is eleven bushels and a fourth of grain, and twenty-one pounds of butcher's meat, for each acre. The sand farm, after making like deductions, averages per acre ten bushels of grain and 35 pounds of butcher's meat. This is considered surplus produce.]

To these estimates of surplus produce, there are to be added, the hides, the skins, the tallow, and a variety of other articles, the basis of many important manufactures, the value of which, though it is impossible to give its amount correctly, from its great uncertainty, and the fluctuation of prices, must be very considerable.

If such are the beneficial effects resulting from cultivating of the soil, (and the facts are established beyond contradiction,) what source, either of domestic industry, or of foreign commerce, can in any respect be put in competition with such a mine of wealth, when extended over a great empire?

2. But the prosperity of a nation, as already observed, depends not only on having a great marketable surplus, but also on its disposable produce fetching such a price, as to encourage re-production. This was the case during the last war; and hence the nation was enabled to persevere in it for so many years, and finally to bring it to a successful conclusion. By means of a great surplus of agricultural productions, sold at a high price, the profits of the farmer, and the rents of the landlord, were doubled; these two classes, were thus placed in a condition to pay very heavy taxes to government;—to engage in great undertakings of a private description;—to furnish employment to laborers, to whom the price of bread was of little consequence, while work was always to be had, at wages proportioned to the price of corn;—and to consume immense quantities of merchandise, and articles of manufacture, by means of which, those two branches of national industry were supported, when they were in a great measure deprived of foreign markets. History does not furnish an example of a nation, which *abroad*, made such incredible exertions, while *at home*, so many millions of people enjoyed all the necessities, the comforts, and most of them the luxuries of life; the whole originating in prosperous agriculture, without which, our manufacturing industry, our commercial relations, or the necessary operations of our finances, could not have been carried on.

3. Nor is it alone sufficient, that the farmer should have a price adequate to promote re-production: he should likewise have, such a command of capital, (and if it must be borrowed, at a moderate rate of interest,) as will enable him to carry on his business with energy. Indeed, when that takes place, it lays the foundation of general prosperity. It will not be disputed, that a hundred persons may be put to the greatest inconvenience, because one individual, *at the head of a chain of circulation*, cannot pay one hundred pounds. Enable him to pay that sum, and progressively, those connected with him are relieved. "But it is the farmer who is the first link, in the great chain of national circulation." When he is supplied with money, he is enabled to pay his rents regularly;—the landlord is thus enabled, not only to employ a number of laborers, but to purchase goods, from the British manufacturer, and the foreign merchant;—the latter finding thus a demand for foreign goods, is enabled, in return, to export British manufactures to foreign markets;—by means of an abundant circulation also, the revenue is paid without difficulty, it is regularly remitted, and furnishes the means of paying the dividends due to the stock-holders; the credit of the country is thus maintained, and every class in the community prospers. The whole, it is evident, *originates with the farmer*, the first link, in the great chain of circulation, whose basis is the plough.



The superior importance of agriculture, has been recently proved, in a manner so convincing, and unanswerable, that the question ought, now, to be forever put to rest. It is well known, that all the resources of the country were put to the test, by the strict manner in which the tax on income was exacted. By analysing, therefore, the produce of that tax, under all its several branches, the real foundations of our national wealth and prosperity, may be ascertained, with a degree of correctness, previously unattainable. The result of the inquiry is as follows:

1. Taxes on landed property,.....	£4,257,247
2. Ditto on the farmers or occupiers of land,.....	2,176,228
Total agricultural classes,.....	
3. Taxes on commercial property,.....	£2,000,000
4. Ditto on professions, .....	1,021,187
	3,021,187

Difference in favor of the agricultural classes,..... £3,412,288

Hence it appears, that during that eventful period, when the ignorant, and the prejudiced supposed, we existed solely by trade, and that we ought to be considered merely as a nation of *shopkeepers*, it was the wealth arising from the productions of the soil that chiefly enabled us to go on; it was successful agriculture, that furnished us with the means of carrying on the contest, and of bringing it to a triumphant conclusion.

Nor is this subject to be dwelt on solely in a financial point of view. Let it at the same time be considered, that it is the land which furnishes the raw materials of the greater part of our manufactures; that the proprietors and occupiers of land, supply the best markets to our manufacturers and merchants; and that through them, the greater part of all other professions gain their livelihood. Numbers of the fundholders are little aware, that upon the prosperity of agriculture, the regular payments of their dividends must principally depend. *For it is to be observed, that as the property tax was imposed on all the classes of the community, in proportion to their wealth or income, hence, the taxes payable in every other way, by each class, and every individual in each class, who spent his income, must be paid, in nearly the same proportion, as the tax on property.*

It cannot, at the same time, be doubted, that the agricultural classes, are much indebted to those employed in trade and manufactures, for consuming the produce of the soil. But still, it is the surplus productions of agriculture, raised under the superintendence of the owners of the soil, and by the skill and industry of those who occupy it, which constitute the real basis of our national prosperity; and exported manufactures, are nothing else, but so much beef, mutton, wheat, barley, &c. converted into another, and more convenient shape. Where manufacturers, however, are maintained, by the productions of foreign industry, and in particular, when the articles they manufacture, are produced from foreign raw materials, as fine wool; instead of being an advantage, they have the effect of depreciating the value of domestic agricultural productions, and bringing in foreign articles, into competition with them, by means of British capital. The paltry profits of the manufacture, are nothing compared to the mischiefs which are thus occasioned, to the real sources of our prosperity.

It is to be hoped that these statements, will satisfy every impartial individual, that the strength and resources of this country, principally arise from the productions of the soil;—that the land, is the basis of our national wealth, and that on the amount, and the value of its productions, our commerce and manufactures, and the payment of the public creditors, must in a great measure depend. The revenues of the church;—by far the largest proportion of the payments to the poor;—and various other public charges, are likewise payable from the same source. Hence, nothing can be more impolitic, than to neglect the adoption of any measure, by which the interests of agriculture can be promoted; or more hazardous, than to take any step, by which its prosperity can be impaired, or those who live by it, impoverished, much less brought to ruin.

The means, therefore, by which the agricultural prosperity of a country can best be promoted, merit our peculiar attention.

It has long been considered, as an incontrovertible proposition, and approaching to the nature of an axiom, "That whoever could make two ears of corn, or two blades of grass to grow upon a spot, where only one grew before, would deserve better of mankind, and do more essential service to his country, than the whole race of politicians put together."

There never was a greater instance of sophistry, than this doctrine of Swift's, who seems not to have been at all aware of the immense benefits conferred upon agriculture, by a judicious system of civil policy. In fact, the prosperity of agriculture, depends upon the politician. The better and the more equitable the civil policy of a country, the more perfect will its agriculture become. Those politicians or statesmen, therefore, who, by removing every obstacle, and furnishing every proper encouragement to agriculture, promote its advancement, have a higher claim to the gratitude of mankind, than those who have merely performed a secondary or practical part, which part, they never could have performed at all, but under the protection of wise laws, regularly administered, and executed with impartiality and vigor.

This leads to the most important discussion, perhaps, in the whole range

of political inquiry, and respecting which, the most ill-founded prejudices are unfortunately entertained, namely, "What public encouragements, for the advancement of agriculture, ought a wise government to bestow?"

Many able men, reasoning solely from the abuses to which the system of encouragement is liable, have thence been induced to condemn the policy, and to recommend, that of giving to individuals the entire freedom of exercising their industry, in their own way, without any legislative interference whatever. They dwell much, on the reply once made by some of the principal merchants of France, to the celebrated Colbert, who having asked, *what government could do for them?* was answered, "Laissez nous faire," (*Let us alone.*) On the other hand, they totally reprobate the mercantile system, as they call it, (or a series of laws which have been enacted in this country, for promoting the prosperity of commerce,) as in the highest degree impolitic; though, under that very system, the commerce of Great Britain, has arisen to a height altogether unexampled in history. But as our legislature have wisely deemed it expedient, to protect both our manufactures and commerce, which, under such a system, have so eminently flourished, no good reason can be assigned, why, in a like manner, and on the same principles, agriculture ought not to be encouraged in Great Britain, where it produces such a great revenue;—where, with a thousand millions of national debt, we still have above twenty millions of acres, lying in a state comparatively waste and unproductive;—where the population is rapidly increasing;—and where it has been found necessary for some years past, to import no inconsiderable portion of the means of our subsistence.

It is certainly better to let agriculture alone, than to establish injudicious regulations respecting it. But if a government will make such inquiries, as may enable it to judge of what can be done with safety and advantage; and will promote agricultural industry, not only by removing every obstacle to improvement, but by granting positive encouragement; agriculture will prosper with a rapidity, and will be carried on to an extent, which is hardly to be credited; and in a much superior degree, than by the "let alone system," under the torpor of which, ages might pass away, without accomplishing, what might be effected in the course of a few years, under a judicious system of encouraging regulations.

The principal encouragements, which a wise and liberal government, will naturally be anxious to bestow, for the purpose of advancing the agricultural prosperity of a country, may be classed under the following heads.

1. Removing obstacles to improvement; 2. Promoting the collection and diffusion of useful information; 3. Giving a preference to domestic productions in the home market; 4. Encouraging the exportation of any surplus produce that may remain on hand, after the demands at home are supplied; 5. Extending, by every prudent means, the cultivation of waste lands, in order that the productive territory of the country may be constantly on the increase; 6. Granting public aid to substantial improvements, such as roads, bridges, canals, &c. on which the agricultural and general prosperity of a country so essentially depend; and, 7. Countenancing the establishment of corporations, to furnish the means of carrying on such improvements, as are beyond the power of individual wealth or enterprise.—*Sir John Sinclair.*

From the Hampshire Gazette.

#### BEES.

MR. HAWLEY.—Sir: As it is customary when notice of a marriage is sent to the printer for insertion, to accompany it with a slice or loaf of the bride's cake, I lately took some honey from a bee hive, and I think there is no impropriety in offering a bit of honey to the printer. Therefore I take the liberty of so doing. I compare the diligent editor of a public newspaper, in some measure, to the industrious honey-bee. By the astonishing instinct in the nature of bees, they labor all the day, and gather sweets from every opening flower, and other things, and convert it into that delicious article, honey. So the industrious and diligent editor toils day and night, hot or cold, rain or shine; sometimes perplexed (I conclude) to select and write such matter as may please those who patronize his paper; and it seems to me that sometimes they must hesitate to decide what will please, and what will not; and after all the pains taken, and the best possible selections made, there will be a small pack of grumblers, condemning the paper;—but I have noticed that such characters are very tardy to pay for their paper.

I took up a hive of bees not long since; the swarm came out in July, and it was about eleven weeks from the time it swarmed. The hive contained sixty-three pounds of honey-comb, and all of it, excepting four pounds of dry comb and bee bread, was filled with as nice honey as I ever saw. I do not know it to be an extraordinary yield; but it seemed to be a large quantity for a middling size swarm to collect in less than three months. I shall now briefly state, in part, the method I pursue in the management of bees. To secure and protect the bees from the ravages of the miller or bee-moth, which has been so destructive to them of late years:—Early in the spring, before the millers appear, the swarms that I have kept through the winter, are placed on the bare ground. I scrape the ground smooth in a dry place, and there set the hive for the season. When a hive is so situated, the millers do not deposit any of their eggs, either under or in the hive. In that position the honey is also

kept cool, and I never have had any honey-comb melt down in hot weather, in a hive set on the ground. I have oftentimes, when a swarm came out, set the hive on the bare ground under the tree where they collected, and there let it remain all summer, securing it from wet, by placing a piece of board over the hive. In the fall, those hives of bees that I design to keep over winter, are put in the bee house, (Apiary.) It is not more than twenty-five years since I first saw or heard of the bee enemy, the miller, and for 22 years, or since I have practised setting the hives on the ground, I have not lost a swarm, nor received any injury from that mischievous insect.

In former times, when the bees swarmed, cow-bells, warming pans, fire-shovels and tongs, and any thing else that would make a rattling noise, were put in requisition to stop them from going off; and when the bees had collected into a bunch, a table must be placed under the limb, and covered with a clean white cloth. But ever since I have kept bees, I have rattled nothing to prevent them from absconding, nor set a table for them, but whatever the swarm is attached to, I lay it on the ground, and then place the hive, as far as I can, over the bees, and it is seldom that I ever lose a swarm. The greatest curiosity that I ever witnessed in the movement of bees, was several years ago. I had a swarm come off, and it gathered on an apple tree limb in two bunches, about three feet apart; the limb was cut off and laid on the ground, and a hive fixed partly over the largest parcel. The bees, however, seemed not inclined to enter the hive. Some time in the afternoon, I sat down near by, and watched them, suspecting they might rise to go off. They were quite settled down, and but very little movement among them. Of a sudden there were a number of bees, perhaps a hundred, sallied out from the bunch where I had set the hive. They crept along on the limb with a lively step, to the other bunch. Instantly there was quite a bustle, and suddenly the queen bee (as it is called) came out from the bunch, preceded by an escort or front guard of bees, as it appeared; at the same time, a sufficient number of them filed off to the right and left by an oblique step, as a flank guard; her Majesty passed along, slowly and gracefully on the upper side of the limb, and the bees in the rear, all followed in close column, so the commander in chief was escorted in fine style to the hive, passed in, the followers displayed column, (deployed) entered the hive in front, and on the right and left side, and within a few minutes most of the bees were in their new habitation, and out of my sight.

South Hadley, Oct. 23, 1837.

#### DRAINING—(Concluded from page 170.)

##### CONSTRUCTION OF DRAINS.

After the cause of the wetness has been discovered, and the most convenient place for discharging the water ascertained, the lines of the drains must be fixed, according to the principles already laid down, by means of pins, small pits, or plough furrows. If the work is to be done immediately, pins or small pits will be sufficient marks to direct the workmen; but, in case of its being delayed any length of time a furrow should be drawn with the plough in the line of each drain, which will shew itself two or three years; indeed, to prevent mistakes, from the marks being removed or trampled down by cattle, plough furrows are preferable to all other marks.

**Open Drains.**—In draining bogs or moss, where the drains do not reach the hard bottom, ditches are preferable to covered drains, for should stones be used when the bottom is very soft, they would sink, whereby the drains would become useless; indeed, in all situations where the ground will allow it, the principal drains should be open; and when they can become the division of fields, which, in many instances, is practicable, that should never be neglected. It would be unnecessary to give any particular directions for their depth or wideness, as that must depend on the quantity of water they are to convey, and on the nature of the soil and situation in which they are made: one rule, however, may be general, that the width at the bottom should be one-third of that at the top, which gives a sufficient slope to the sides, and the fall or declivity should be such as the water may run off without stagnation. In very soft soils, a greater degree of slope on the sides may be necessary; and in all cases where it is meant to receive surface water only, none of the earth thrown out should remain upon the sides, but should be removed to the nearest hollows; for when this is not done, their use is in a great measure counteracted. The earth, when left on the sides, prevents the surface water from getting into the drain—its weight causes the sides to fall in—makes it more difficult to scour or clean it—and adds much to its disagreeable appearance in the middle of a field. In cases where the auger or wells are obliged to be resorted to in open drains, they should never be made in the bottom, but on one side, with the outlet eight or ten inches above, (as shewn in plan 4, figure 2,) which will prevent surface or flood water depositing any sand or sediment in the boreholes, whereby they might be injured.

**Shoulder Drains.**—Any surface water or partial springs in moss and marshy ground, on which the large drains have no effect, and where stones cannot be used on account of the softness of the soil, is most effectually removed by means of shoulder drains. The method of making

them, is by digging a trench from fourteen to sixteen inches wide, the sides perpendicular to the depth of two or three feet, and then by taking out the last spit with a spade, the breadth of which is three inches at the bottom, and four or five at the upper part. A shoulder is left on each side, on which the sod that was first taken up is carefully laid with the grass side downwards, or if it is not strong enough, others must be cut in the vicinity, and the remaining space filled with the loose earth a few inches above the level of the surface of the adjacent ground. (See plan 4, figure 1.) Drains of this description, when properly executed and moles kept out of them, will operate for a great number of years.

**Covered Drains.**—In every instance where covered drains are used, their dimensions depend on the depth, the quantity of water they have to carry, and the kind of materials they are filled with. When the depth does not exceed five feet, two feet wide at top will be sufficient; but whenever it is more, the width should be increased four inches for every foot in depth, and the width at the bottom should be twenty inches, which will give a sufficient space to build a substantial conduit. When this is not attended to, and the bottom of the drain is made so narrow that the stones of which the sides of the conduit are formed are obliged to be set on their edges, and the covers laid on them in this insecure state, they, in many instances, fall down before the drain is half finished, causing it to burst in a very few years, and often forming springs in the driest part of the field.

In digging drains, there are several circumstances which, if attended to, will greatly facilitate the execution of the operations, such as having the stones laid down by the upper side of the lines of the drains before the work is commenced, to be ready in case the sides should slip or fall in, which often happens in mixed soils, as, when this precaution is not attended to, the expense is not only considerably increased, but the work is done in a less accurate manner. Particular care must also be taken that the bottoms of the drains are made with a regular descent, so that the water runs from the one end to the other without standing dead; and where bore-holes or wells are necessary, they must be made before the conduit is laid, in order that the sand may be removed which the water may throw up from the stratum below, and would otherwise be deposited in the bottom of the drain, which would thereby be rendered useless.\* The dimensions of the conduit depends upon the quantity of water it has to carry; thus, in an outlet drain, it requires to be larger than in a cross drain, which has only the water collected in itself to discharge. In general cases, therefore, the conduit in an outlet should be made from nine to twelve inches square, and, in cross drains, from four to six inches square. When the bottom of the drain is very soft, it must be laid with flag stones, to prevent the materials from sinking; and the stones forming the side walls of the conduit must all be laid on their flat beds, and covered with strong covers well joined together and packed at their ends; the space above, in clayey soils, must be filled with stones, broken to the size of a man's clenched hand, to within twelve inches of the surface of the ground, which remaining space must be filled with porous earth. Before the earth is put into the drains, the stones must be covered with straw, rushes, or turf with the green side downwards, to prevent the loose particles from subsiding into the crevices among the stones. In cases where all the water comes from bore-holes, or rises in the bottom of the drain, eighteen inches of small stones above the covers is sufficient; but when it comes from the sides of the drain, it is necessary to fill the drain above the covers with some kind of porous substance, six inches higher than where the water breaks out; the neglect of this precaution is the reason why so many drains have so little effect in drying land. Figure 3, plan 4, represents a covered drain filled agreeable to the above principles, and which is well adapted in all cases when the drains are of a considerable length and depth, and have a great quantity of water to discharge.

In making covered drains, particular attention must be paid that they are not carried into the outlet at right angles, as their ends should be turned down in the direction the water is to run a short space before they join it, to prevent the water in the outlet depositing any sand or sludge in their mouths, which will be the case if this is not attended to; indeed it often happens, on almost every estate, that the drains are stopped and rendered useless from this precaution being neglected. The mouths of the drains ought also to be well built and secured with iron gratings, to prevent vermin from getting into them; and it must be examined from time to time, to see that it is in proper repair, and the outlet kept a sufficient depth, so that the water coming from the drains may run away freely, otherwise it will remain stagnant in them, to the great injury of the land. To obviate this, it is advisable that a person should be appointed on every estate, under the superintendence of the factor or land steward, to go through every field that has been drained, at least once a year, to

\* This is often the case; for example, in draining Runnaby meadow, the drain B was completely filled with sand to the same level with the surface of the ground, within twenty-four hours after the bore-holes were made, which not only surprised many who went to see the operations, but even the proprietor believed that the drainage of that part of the field could not be accomplished; however, by persevering in removing the sand, and the strength of the springs diminishing in a few weeks, that part of the field was first dry.



examine the mouths and outlets of all the drains, and make any necessary repairs as he proceeds. Such an arrangement, I am convinced, would be very beneficial, and is highly necessary, as I have often found drains completely stopped in a year or two after they were made, and the land beginning to be wet again from this cause alone. Managers of landed property ought to be very particular in this department of rural economy; indeed a clause ought to be inserted in every lease, binding both proprietor and tenant to keep the mouths and outlets of drains in proper order at their mutual expense.

**Rumpling Drains.**—These are well adapted for removing water from alternate beds of clay and sand ridges, and also water confined in porous soils with an impervious bottom, as well for receiving surface water from clayey soils. Their depth, in the two former cases, is generally about four feet, and twelve inches wide at the bottom; they are filled with stones, broken to the size of coarse road metal, to within ten or twelve inches of the surface of the ground, and, in clayey soils, the remaining space with porous earth. Wood is sometimes used in drains of this description instead of stones; but, as it is liable to decay soon, and the drains will consequently be destroyed, it cannot be recommended when stones, gravel, smithy danders, or even coarse sand can be procured. Indeed, whenever my opinion has been asked with regard to making drains with wood, my uniform answer has been against such a practice, having had experience of so many instances in which wood had been employed, although stones might have been procured in the same field, of the land having to be drained again within a few years; and, consequently, I could not consider myself acting candidly towards my employers in advising it. An instance of this occurred at Wall-house, Linlithgowshire, a few years ago, in which I was called on to make a plan to drain the grounds immediately around the mansion-house, and having examined it, I found that the whole had been drained some years before, and the drains filled with thorns and other brushwood, which had decayed, and, the clay having fallen in, springs were formed in many places in the lines of all the drains. What surprised me was to find them laid off in such a manner that there was no occasion to alter any of the old lines; and having inquired who was the engineer, I was answered, your late brother. Being, however, aware that he never recommended drains to be filled with wood, if stones could possibly be procured, and more especially that he would not have done so in draining pleasure ground, where, in most cases, no expense is spared to do the work in the most substantial manner, I suspected that the work had not been executed according to his plan, and, upon making further inquiry, I found that my suspicions were correct, his specification having directed them not only to be made with stones, but also to have been from two to three feet deeper, which was exactly what I caused to be done, whereby a complete drainage was obtained.

**Tile Drains.**—These are best calculated for removing surface water, and are made just wide enough to let the tiles be put easily into them; they are, in most cases, about twenty inches deep, but tiles may be used at any depth, provided the drain is filled with broken stones, or other open materials, to nearly the surface of the ground. The tiles should always be *well burnt*, and laid on soles, as whenever this is neglected, which is too often the case where tile draining is now practised, their duration will unquestionably be very short, whereas hard burnt tiles will last for almost any length of time without mouldering down.\* The expediency of using tiles instead of stones depends entirely on circumstances; for, if stones are to be found, whether by collecting on the surface or quarrying within the lands that are to be improved, or even if they can be procured within a mile of the operations, tiles should never be used. Stones are preferable to tiles in making drains in all kinds of soils, provided a sufficient quantity are used, but where only a few inches of broken stones are used in a drain, well burnt tiles laid on thick soles, and covered with turf or any other porous substance, would answer the purpose better; and in porous soils, where the water is found at or near the bottom of the drain, if six or eight inches of broken stones were used in packing and covering them, a more substantial drain would be formed. In clayey or mixed soils, where the water enters the drain at different depths, stones, gravel, or smithy danders, are the only materials that can be used with advantage; in any case, however, where tiles are used, the space above them must be filled to the surface of the ground with some porous material, otherwise the drains will be useless, and the undertaking will prove a complete failure.

In the preceding pages, I have endeavored to set before the reader, in as plain a manner as nature of the subject would allow, a short practical detail of the principles required to be applied in draining the different descriptions of land, in all its diversified variety of soils, strata, and inequalities of surface, and I hope will, in some measure, convince landed proprietors and those engaged in agriculture, of the folly of supposing that

\* In draining the park at Grimsthorpe, Lincolnshire, about three years ago, some drains made with tiles were found eight feet below the surface of the ground, the tiles were similar to what are now used, and in as good a state of preservation as when first laid, although they must have remained there above one hundred years.

any single rule can be applicable to every case, without being modified to the particular circumstances to which it is to be applied.

To drain land effectually, and at the least expense, must surely be the desired object of those who engage in it; but how can they ever expect to attain this, if the work is executed without any consideration of the cause from which the wetness proceeds, as is too often the practice in this country. Thus, when a field is injured by wetness, no matter from whence it comes, all that is thought necessary to dry it, is to make drains straight to the wettest place, and through the hollowest part of it, and if these have not the desired effect, others are added, and the work-people are bound to make them a fixed depth, and, after cutting and carving in all directions, the land is partially dried, and, in some instances, completely, but at three times the expense it would have been if they had been properly directed. The person engaged in this arduous undertaking believes himself a complete drainer, and tells his master that there is no occasion for employing a professional man to lay off the drains, for he can do it as well as any man, and at half the expense; the master believes him, and being glad he has such a clever person in his employment, gives orders to commence operations, which are carried on for two or three years, when, after having spent a considerable sum of money to little or no purpose, a professional man has to be sent for to investigate the cause of the bad success and provide a remedy, which has generally to be a complete renewal of the operations upon other principles. Besides the instance at Castle Strathallan, already mentioned, of land having to be drained anew, another case occurred in which I was employed near Lanark, where the person acting as land-steward having prevailed on the proprietor to let him drain two fields with a number of small drains, the result was, after spending considerable time and capital, the land still continued very wet. When I was called upon, I found that not only much deeper drains were necessary to remove the evil, but also considerable alterations were required in their directions; which being executed, has proved completely effective in drying the land.

A similar case occurred at Dargill, in Perthshire, the property of Lord Willoughby de Eresby; the soil of the field is of a light nature, with a sub-soil composed of a mixture of gravel and clay, from four to seven feet deep, under which lies the stratum, composed of sand and gravel, which contained the water. The former tenant spent a great deal of money in attempting to drain it, but with no effect, as the drains were not deep enough to reach the cause of the wetness, on which account the field lay nearly waste for several years. His lordship being anxious to bring it into cultivation, I was desired to get it drained: and, accordingly, I found it necessary to deepen the outlet, and to have it covered, on account of its great depth: the conduit was made twelve inches wide and two feet high, which not only gave the necessary fall for the drains in this field, but also for others connected with it. It was also necessary to make three new drains in this field, instead of the numerous small drains which were made by the former tenant, one four feet, one five feet, and the other seven feet deep, which completely answered the purpose, and made it nearly as valuable as any other part of the farm. I could point out many other such instances, but I consider that those already stated are sufficient to put it beyond doubt, that if any drainage is executed without due attention to the quality of the soil and the nature and inclination of the strata, a failure will most probably be the result. Accordingly, every precaution ought to be taken before any operations are commenced in an undertaking on which the whole success of every other branch of agriculture depends; and, therefore, every circumstance of the sort must be weighed and strictly observed, otherwise landed proprietors will most assuredly be led into serious mistakes. To obviate this as far as lies in my power, I have been induced to draw up this practical essay, with the view of its being the means of introducing a more perfect knowledge of the principles necessary to be applied in draining every kind of land; and which I have found, during thirty years' practice,\* to be uniformly successful in every case where the plans and specification were strictly attended to. This will not, however, be the case if alterations are made, as is frequently done, with the plans of professional men, and which I have sometimes experienced myself, in the drains not being made either the depth nor filled with the same quantity or quality of materials as prescribed, and even, in some instances, the lines of the drains have been altered, consequently the land has been imperfectly drained, whereby the system has come into disrepute, as not answering the soil, or on some other frivolous pretence.

Too much cannot be said in favor of draining, which, particularly when conducted on proper principles, must be beneficial to all parties concerned. Whatever, therefore, may be the defects of this essay, I hope it will call the attention of agriculturists to this system, as first practised by El-kington, and which has proved so useful, not only in our own country, but also in others, as will be seen by the report of the Archbishop of Sweden to the Royal Agricultural Society at Orebro, which will be found in another part of this work; and I trust that what I have said will shew that it

\* During the above period, many hundred miles of covered drains, averaging five feet deep, have been made, under my direction, in this country and Sweden. On the Perth estate alone, ten miles have been made annually for several years past, which, in every instance, has been attended with success.

ought to be vindicated and encouraged by every one who has the welfare of agriculture at heart, until another shall be produced superior to it, which, assuredly, has not yet been done.

[The entire work, of which the preceding is but an extract, may be found in the *Farmer's Library*, an agricultural periodical published by S. Fleet, New-York.]

### Young Men's Department.

[For the Cultivator.]

#### ADVANTAGES AND PLEASURES OF RURAL LIFE.

"O, friendly to the best pursuits of man,  
Friendly to thought, to virtue, and to peace,  
Domestic life in rural pleasure passed!"

How pleasant is a rural life! An unambitious man, who is content to live on small gains—who is not over desirous of wealth, or what the world calls honor, can find, in almost every thing in Nature, something to call forth his mind to reflection and contemplation, and to lead it up to the Great Source of all life and being. There is something in a natural scene, —a landscape, a forest, a river, or lake, which awakens in the mind sensations of pleasure beyond any thing which is realized by the man who is continually confined to business in cities. Besides this, it is more favorable to the cultivation of virtue and moral feelings. A person living in the country is free from the temptations to dissipation and voluptuousness, which present themselves at every corner of the streets of large cities.

Young men, in particular, possess a strong natural desire for amusement and pleasure, and they are led by the many opportunities which present themselves, as well as the fascinativeness of it, to become votaries of the theatre, the game house, and other vicious establishments. From such temptations youth in the country are in a great measure free. They can associate together without being led into crime. They can walk through the verdant fields and enjoy the fragrance of the balmy air without being assailed by a profligate, who would gladly make them like himself.

Another consideration which heightens the value of a country life is its healthfulness. The salubrity of the air which sweeps across a forest or cultivated field, fraught with fragrance of the herbage, is the most pure of any; it revives the spirits and is most congenial to health. If I wished to enjoy rational and virtuous pleasure, such as Nature has designed we should enjoy, I should certainly choose a rural scene. There I could be comparatively free from disturbance by the midnight drunkard, and from the oaths of profanity, which we cannot fail to hear almost every time we walk the streets of our populous cities;—free from that obscenity which there too stalks abroad, and appears in enchanting characters in the bills of theatres and other public hand-bills; and free from the distressing curse which trouble the man of business there. Were there nothing in the quiet of a rural life more than its tendency to lead men to a calm, contemplative, peaceful state of mind, it would appear that these were a sufficient inducement for adopting it. But such is the power of fashion over men, and such their love of splendour and greatness, that we find but few who are willing to give up to it. They appear to wish to keep their minds as far removed from themselves as possible; and to think that were they to be placed in a situation where they could not have access to their gay though heartless companions—where their minds would be turned in upon themselves, and they be led to reflect on their ways, would be a situation almost as miserable as they could conceive. They are continually asking for something new—something to keep up the excitement, and expel all serious and sober thoughts from their minds. There is a vacuity in the minds of fashionable people without some such excitement which almost makes them sick of every thing around them, and even of life itself. This arises principally from idleness;—from having nothing on which to fix the energies of the mind. Despising all manual labor as mean and boorish, they would think it degrading to be employed in any kind of useful industry. In fact, "to kill time" is the great business of a large portion of community. The more successful they are in accomplishing this, the more honor they claim to themselves. With such a mind, it is not surprising that men should abhor the quiet, unassuming humility of a rural life. That it is humiliating I allow; but this humility is one very important ingredient in human happiness.

It has been very wisely said, that no applause is of any value unless we have with it our own approbation. The man who amasses wealth by means which his conscience tells him are wrong, may receive honor from the multitude. He *will* receive it. Riches do procure for the possessor a certain degree of respect from all classes. But will that honor advance in the least his own happiness? Will it support his mind in trouble like a consciousness of rectitude? I answer, no! Will it not rather, when he thinks of himself, make heavier the lashings of conscience? I believe a temptation to make money *fast*, and get *immediately* rich, is ruining thousands. Such is the desire for wealth, that men are tempted—strongly tempted, to use any means to acquire it, whatever may be their moral tendency. They engage in reckless speculations; lay out a piece of forest land into village lots, and sell them at an incredible price—launch in-

to business, and into debt without counting the cost, and are obliged so give up their effects to their creditors. And even if successful, there is, perhaps, greater danger. It has been always observed, that a fortune very quickly gained, generally ruins the possessor. There is something to enchanting—so fascinating in riches, that very few can receive the smiles of fortune with an uncorrupted heart. There is danger—great danger here where few anticipate it, or are prepared for it. The man who, by patient toil and industry, has acquired a competency, knows how to value and how to use it, but he who has gained a fortune as Jonah did his gourd, will in most cases be left like him to mourn its premature loss.

But if successful—should he gain his utmost wishes, and realize his most sanguine hopes, how it elates his heart! how it lifts him above his former associates! with what feelings of disdain does he look down upon those who are less adventurous than himself; who labor by small means to gain a comfortable, and an honorable competence! Having gained his fortune with so little trouble, and in so short time, there is danger of his running into excesses of all kinds, and thus ruin his health and corrupt his morals. It having cost him so little, he knows not how to appreciate its value. He has but little sympathy for those who are in want, for he thinks with a little exertion they might easily take care of themselves.

Besides, there is a proposition which I have never heard advanced. It is, that God has given to mankind a certain quantity of the necessities and comforts of life to be used by, and are needful alike to all; and they who hoard up a greater quantity than is sufficient for their own use, deprive others of their legitimate share. This is supported by the fact, that in those countries where some are very extravagantly rich, many are equally disproportionately poor. It is a principle in political economy, that all idlers, including gentlemen who live on their fortunes, and all fashionable people who do nothing, and all non-producers, are supported at the expense of the industrious. There is no difficulty in discerning the truth of this. It is so plain that no one can easily mistake it. This being the fact, are those free from crime who amass enormous wealth? I mean those who amass it for its own sake, and for personal aggrandisement, and not to use it for the benefit of their fellow-men, less favored than themselves. There is certainly something noble in the men who make money for the good of their species. I honor such men; I respect them; I consider them indeed the benefactors of mankind. But for any lower object, I consider it doubtful whether men are free from crime who heap up wealth more than they themselves need. Thus we see it is a positive duty, binding on every man of wealth, to do all the good with that wealth in his power.

But my object was to examine the relative enjoyments of a rural and a city life. The man who is once infected with the mania of money making, cannot easily be persuaded to give up his object for one so unpretending as a rural occupation presents. The idea of making thousands is too fascinating for him to be induced to relinquish it. But what is the object of life? Is it not the attainment of happiness, both for the present and future life? And is money the only or most sufficient means of procuring this happiness? If it is, then let every man devote his entire energies to acquire riches; but if not, how foolish is such a course! That it is, who will pretend? That it is not, is proved by the experience of, perhaps, every one who has gained a fortune, if he would frankly acknowledge it. No; "a man's life consisteth not in the abundance of the things which he possesses." Happiness is not to be gained by any selfish means.

In the occupation of the husbandman there is very little to gratify a thirst for wealth, ease, or pleasure. The man who would adopt it, must expect toil; he must expect to work hard; but his labor is well compensated. He feels a satisfaction which money cannot give. This is no doubt the situation for which man is peculiarly adapted. He is fitted for labor; without it, life hangs as a dead weight upon him, and he feels weary of himself; by it he sustains his health, produces his subsistence, and enjoys many pleasing emotions to which the idler is a stranger. Thus it is that the curse denounced on man, when he was expelled from Eden, is to prove a real blessing. Nature presents to the mind many sources of rational enjoyment. Who can look over any part of our fair world, and behold the variety of its products, and how exactly they are adapted to the wants of animated existences, and to man, without feeling a glow of pleasure thrill his mind, and thankfulness arise from his heart to the Great Author of all this pleasing variety of beauty and usefulness? Who can look up and behold in the twinkling points above him, suns and other systems of world, without being divested of any desire to appear great in the estimation of his fellows! There is not the smallest object—a leaf, a plant, a flower or an insect, but will teach a lesson of wisdom to the reflecting mind.

P.

*Origin of Disease.*—I will tell you honestly what I think is the cause of the complicated maladies of the human frame; it is their gormandizing, and stuffing, and stimulating these organs (these digestives) to excess, thereby producing nervous disorder and irritation. The state of their minds is another grand cause—fidgeting, discontenting yourself about that which can not be helped, passions of all kinds, malignant passions, and worldly cares pressing upon the mind, disturb the cerebral action, and do a great deal of harm.—*Abernethy.*